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THE LATE MR. H. G. MCCLELLAND
("ATHENIAN.")

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THE TROUT FLY DRESSER'S CABINET OF DEVICES

OR

HOW TO TIE FLIES

FOR

TROUT AND GRAYLING FISHING.

BY THE LATE

H. G. McCLELLAND

(*"Athenian" of the "Fishing Gazette"*).

WITH EIGHTY ILLUSTRATIONS.

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PREFATORY NOTE.

(From the *Fishing Gazette*, July 23, 1898.)

THE LATE MR. HARRY McCLELLAND.

("ATHENIAN," OF THE *Fishing Gazette*).

As promised in a footnote to the graceful little tribute to his memory, which I published last week, from "Val Conson," I now give a portrait* of "Athenian," whose articles on "Trout Fly Dressing" have been appearing in the *Fishing Gazette* at intervals during the past fifteen months or so. The series was so nearly complete that he had written part of the last article, with a sadly double meaning in its title, viz., "Parting Observations and Hints."

Having been struck with the novelty, soundness, and originality of letters on fly dressing which appeared in these columns from "Athenian," I, two or three years ago, invited him to do a series of illustrated articles on the subject, and he took the matter up with great enthusiasm. I never had the pleasure to meet "Athenian," but live in hopes of meeting him and many other keen anglers on the banks of good streams in the next world. But I had a long and pleasant correspondence with "Athenian," and always found him most courteous, and ready to fall in with

* The portrait forms the frontispiece of this little volume. —R. B. M.

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suggestions. His articles were eagerly looked for by all who take more than a superficial interest in fly dressing, and certainly deserve the very high praise given them by "Val Conson," than whom there is no better judge living, and I cannot do better than reproduce his note here.

DEATH OF "ATHENIAN."

DEAR MARSTON.—You have doubtless received from the family of the contributor who wrote in your pages over the singularly appropriate name of "Athenian" the announcement of his death. It was only in correspondence, both private and in your columns, I had to do with him; but I should like to say this, that in him the art of fly dressing has lost, at a very early age, probably the most prolific, ingenious, and inventive intellect of the century. He was always eager to hear and to tell some new thing, and the new thing he told was nearly always of his own discovery. In controversy he was always a fair and courteous opponent, and as a correspondent he was generous to a degree in his communication of what he thought would interest or help.

Thus, though I never had the pleasure of meeting him, his early death touches me with a sense of personal loss, in which you, I feel sure, will share, and I should like, as one of the many readers of the *Fishing Gazette* who has had the benefit of perusing his singularly clear and exhaustive contributions, to testify, through your columns, to those he leaves behind him how warmly we appreciated him and how sincerely we deplore his loss.—Very truly yours,

VAL CONSON.

It was Sunday, July 3, 1898, that my correspondent died; and his brother, Mr. Herbert S. McClelland, in sending me the news on July 7, said:

"My dear brother, who has been writing under the name of 'Athenian' in your paper, passed away on Sunday last. It is exactly six years since he and I came home from school, before the

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end of the term, owing to the illness which attacked his lungs, and rendered him very weak and unfit for work, though at times, sometimes for months, he rallied in a wonderful way, and looked and felt quite well. About a fortnight ago, when he realised that he was dying, he asked that I should write to you and send the part of his last article which he had written, together with some notes intended to be embodied in it, and request you to get it finished for him, and have it published in the *Fishing Gazette*, so that when you published the series of articles in book form, as arranged, this one might appear also."

Of course, I was glad to promise that this should be done, and hope that "Val Conson" will kindly add the few words that are all that seem necessary to complete the chapter.

During my long connection with this paper, the only sad part of it has been this recording the loss of friends and contributors. It is doubly sad when the record is of a bright young fellow cut off "just when the doors of manhood were opening to him. . . . Like the flowers which covered his coffin, his young life exhaled a fragrance that will linger long in the hearts of those who knew him best."

What we fly fishers have lost in him has been well and truly said in the letter I have quoted above from "Val Conson."

R. B. MARSTON
(Editor, *Fishing Gazette*).

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HOW TO TIE FLIES

FOR

TROUT AND GRAYLING FISHING.

INTRODUCTION.

It is, perhaps, unnecessary that I should here dwell on the advantages which a knowledge of fly dressing gives to the angler, since it is to be expected that they are already known and felt by those who read these lines. At the same time such a course seems natural, and—with the reader's pardon—its adoption gets me out of the difficulty of knowing how to open up my subject.

Every angler for trout will admit that the qualities which go to make one successful in his craft are judgment, skill, and knowledge of the trout's habits and powers, and of the insects on which he feeds; and are not these the very qualities which go to make a successful fly dresser, and which are developed in the practice of the art? It is true that fly fishing and fly dressing each require a fair amount of manipulative skill proper to themselves; but they are at least so closely connected that a man, with some practical knowledge of the one, will have many advantages on his side when entering on the other—not only utilitarian advantages, either,

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but those also which will give him a keener enjoyment in the pursuit of both pastimes.

Fly dressing, unlike the making of rods, reels, and other articles of the angler's equipment, is no mere branch of other crafts. It would be obviously unreasonable to expect that all anglers should acquire these latter accomplishments, especially having regard to the lasting nature of the articles named. At the same time it should not be forgotten that it is to those who combine manufacture with use and use with manufacture—whether as professionals or no—that we owe almost all the improvements that have been made in the implements of our sport.

In the study of river entomology, the great importance of which is acknowledged by all who follow the higher branches of angling, fly dressing is almost as useful as dissecting is in the study of anatomy. The manner in which it stimulates the angler's appreciation of the form and colour of the insects with which he is concerned will soon become apparent to all who practise it. And, finally, it may be said that, if the angler is not a fly dresser, the fly which he uses will not in six cases out of ten be the true expression of his ideas as to what it should really be. And surely, with a man so sensitive to detail as your modern angler, this argument should have considerable weight.

I remember some years back reading an article by the Rev. J. G. Wood, in which he shows the difficulty of accurately describing any of nature's colours. It was, I think, entitled, "Of what Colour is a Dandelion?" and may be read in "Out of Doors." The difficulty of which he speaks is one which continually besets the angler in ordering his flies, but which may be, to a great extent—though not wholly—removed by his learning to dress them for himself. It may even

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be considerably modified by his acquiring a good knowledge of the material used in making flies, which, with the entomological knowledge that he already possesses, will carry him more than half way through the task that the beginner who aspires further has to face.

I could say a great deal about the enjoyment, the artistic enjoyment, if I may be permitted so to call it, which is to be derived from fly dressing; but, then, my remarks might easily be mistaken for those of an enthusiast! I will, therefore, content myself by saying that I consider its difficulties to be very much exaggerated both outside and inside the ranks of its votaries.

One reason why the efforts of some to learn fly dressing have been irksome or unsuccessful is that they have begun with the most difficult style, namely, the professional's, or fly dressing without the aid of a vice. As this was the way in which I myself commenced I well know what difficult, finger cramping work it is for the beginner. I trust, however, that the reader will be so far guided by my experience as to adopt the use of a vice and some such accessories and tools as I shall shortly describe, and in a very short time he will know fly dressing to be what, if rightly gone about, it always is—an interesting, easy, and useful recreation.

One often sees in papers requests for information regarding profitable home employment. It has been a matter of surprise to me that fly dressing does not receive more prominence in this connection. There seems to be everything to recommend it. The stock-in-trade necessary for a beginning is small and inexpensive. The profits are good, and, highest recommendation of all, the demand for flies is always brisk, and the market never seems to be overstocked. I hope that these pages may be of use to some of those who may

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take up fly dressing as a means of a livelihood*; though, of course, they are primarily intended for the instruction of the amateur fly dresser.

In this connection I cannot refrain from quoting the following short passage from Robert Louis Stevenson's "Virginibus Puerisque." He is contrasting literature with painting as a hobby, but his words have a very evident application to our present subject.

"But painting, on the contrary, is often highly sedative; because so much of the labour, after your picture is once begun, is almost entirely manual, and of that skilled sort of manual labour which offers a continual series of successes, and so tickles a man, through his vanity, into good humour.

* * * * *

. . . . "A stupid artist, right or wrong, is almost certain he has found a right tone or a right colour, or made a dexterous stroke with his brush.

* * * * *

"It would be well for all the *genus irritabile* to add something of skilled labour to intangible brain work."

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* I am afraid I cannot advise anyone to take up fly dressing as a means of a livelihood. I know several who have tried it and been greatly disappointed.—ED. *Fishing Gazette.*

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CHAPTER I.

ON THE EXACT IMITATION THEORY.

THERE are few questions of more general interest among fly-fishers than that of how far it is necessary or expedient that the artificial fly on the cast should resemble the natural fly on the water. It will not be out of place to devote a chapter to its discussion, as the utility of high-class fly-dressing, and the methods to be followed therein, are practically determined by its answer.

I have myself always found the exact imitation theory a safe one by which to be guided, at any rate when fish are well on the feed. I constantly observe, when wet-fly fishing, that trout will show an unmistakeable preference for a good imitation of one of the natural flies to be seen at the time, no matter in what position on the cast it is placed. Indeed, occasions are of frequent occurrence when it is useless to fish with any other.

As another argument from direct experience, I may say that I have been forced to the conclusion that, when several species of flies are on the water at the same time, a feeding fish will, as a rule, confine his attentions to one of them. This fact rests not only on observations of the fish while in the water, but on the evidence of *post-mortem* examination. I have always made a habit of examining the stomachs of the fish I catch, and have generally found those of surface feeders to contain but one species of fly in any considerable quantity—even when more than one species had

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been continuously abundant, and where this was not the case each species was so massed together by itself as equally well to support my belief that the trout at his ordinary meals is no lover of nondescript dishes or of variety for variety's sake.

Why a trout should exercise this selective faculty I am at loss to explain. It may be for many reasons. It may be that he is a creature of highly cultivated taste. Certainly no creature is supplied with daintier food with which to develop such. Or it may be that all the lower animals are extremely conservative in their nature, perhaps because it saves them the trouble of thinking, or by reason of a sort of self-hypnotism. A remarkable instance of this kind is that of the bee, which may often be noticed to go from one flower to another of the same colour, avoiding those whose colour is different. I am aware that this serves a useful purpose in properly fertilising seed, but it is in the bee's own personal motives that I am at present interested. And surely, if such exist at all, they must contain their element of selfishness. Are not all economic institutions sustained on this principle?

If, then, the trout's habits in feeding are such as I have attempted to prove them, the exact imitation theory stands upon an exceedingly firm basis. It is, of course, impossible to affix an indelibly inscribed label to the character of any individual, still less to that of any species, which shall at all times truly describe it, and so it is not unlikely that we should meet with occasional contrary instances. But, in my opinion, these contrary instances are not really so numerous as they would seem to be. In the first place, there is nothing to prevent our thinking in many cases where "the wrong fly" is taken that it is taken rather for its *resemblance* to the "right" one

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than for its *divergence* from it.* And, again, many instances that appear contrary in a more convincing degree may, in reality, not be contrary at all. For example: Fish are often feeding on sunk flies, or flies just as they are assuming the dun, or pseudimago, state beneath the surface of the water, and the success of some particular artificial may be due to its resemblance to this fly.

In my opinion, also, some instances of fancy flies and others being found more useful than good copies of the natural fly before us, at times when fish appear to be feeding well, are to be satisfactorily explained by the theory that the fish are, in reality, only "tailing" the said natural fly. My own experience lends a certain amount of evidence, since, on several occasions when I have found a random change of fly to result in a capture, the rises have not been of that steady, unobtrusive kind, as when a fish means business, but of a wanton, sportive, tumbling character, often making the water fairly boil, and myself fairly wild with excitement, but in the rarest of instances betokening anything but an empty creel.

At this stage I should, perhaps, remark that my observations have all been taken on a river where insect food is abundant. I can well understand that where this is not the case other conditions may obtain very different from those which I have been considering. I know that those who fish such waters are often inclined to think that it is of little importance what fly is used. I trust, however, that I have already said enough to show that this, when stated as a general truth,

* It is to be noted in this connection that it is the smaller trout that display the greatest laxity of choice; also that different species of flies "on" together are usually very dissimilar: *e.g.*, the May Fly, Alder, and Black Gnat.

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is a creed which does discredit alike to fisherman and fish.

There is now a third theory to be examined. That which, assuming an analogy more or less complete between the purpose of the fly-fisher and that of the advertiser, lays down the rule that, whereas the latter sometimes finds it advantageous to attract attention by a misspelt word or some striking incongruity, the former may hope for good results from the use of an artificial fly resembling the natural in most respects, but with such a difference as may be expected to excite curiosity but not engender fright. This, I think, is a fair statement of the views advanced as plausible by "Mona" in the *F. G.* some months ago, and vigorously controverted by "Pheasant Tail."

There may be much good sense in the idea, as I shall hereafter attempt to show, if applied only at times when fish are not feeding; but, if I reason aright, it depends on an obvious fallacy when its application is extended. A feeding fish cannot be considered to be in an ordinary casual state of consciousness. It is, we should expect, by virtue of *being* a feeding fish, in a state open to receive one certain impression, namely, the image of the fly on which it is feeding, and relatively impervious to all other impressions of no greater inherent magnitude; in fact, in a state comparable rather to that of a person scanning a hoarding for a well-known advertisement he wishes to see, the hoarding containing only advertisements of about the same size and general characteristics, than to that of an unpreoccupied bystander. And just as any advertisement would attract the attention of the said man in a degree proportionate to its resemblance to the one of which he is in search, so the nearer one's artificial resembles the fly which is being taken at the time,

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the better is it calculated to attract the attention of the fish.

To present to such a fish an artificial representing a different fly, or designedly "freakish," is therefore without any excuse that I am able to find, and is only calculated to arouse suspicion, and draw attention to the main point of "freakishness," namely, the presence of the hook. At best it is only to substitute for an imitation of something that the fish expects, wants, and knows it wants, an object having no such certain recommendation.

This latter remark, which is almost independent of any assumption as to the trout's nature, will apply—though with somewhat diminished force—where trout are not actually feeding but "waiting for the rise." Hence, in this case, it is well to *commence* with artificials like the insects seasonable at the time, though other patterns may meet with good success, especially when cast and recast so as to create the idea that flies of this sort are passing over the fish in large numbers.* But when we can satisfy ourselves that the inaction of the fish is due to satiety, or, as may often be the case in the summer time, a disinclination to spoil their appetites for supper, we have quite a different case with which to deal.

When our quarry, their banquet over, have betaken themselves *sub tegmine fagi*, to enjoy that blissful state of lazy repose which we anglers are sometimes privileged to share, it is then that the energetic of our number should mount their Wickhams or other heretical lures that their fancies may dictate. Such a fly might then, as being an unaccustomed sight, and as displaying unusually bold contrasts of colour, force itself

* This is the theory of the late David Foster. *Vide* "The Scientific Angler" *re* red caterpillars.

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upon the unoccupied attention of the lethargic fish, when another would pass by unobserved. It might thus stir it into that impulsive activity which is consequent on the sudden arousal of the faculties in both man and lower animal, and which, being unaccompanied either by suspicion or even ordinary caution, is a state propitious to the success of the angler's strategy.

I can see no need to frame any far-fetched theories to explain why the trout takes fancy flies. It would seem quite sufficient to say that he evidently regards them as things endowed with life, and weaker than himself; and the same obvious explanation will, of course, apply in the salmon's case also. The theory that it is rage that causes salmon and trout to rise at nondescript flies seems quite unnecessary. Is it *rage* that makes the child, the natural child, kill a fly on the window pane—or, years later, throw stones at birds—or, years later still, take delight in catching uneatable fish? Why should we not give all circumstances their much more obvious explanation, as manifestations, of the predatory instinct in predatory animals?

It will not be necessary to remind the reader that, hitherto I have only been discussing the *ideals* to be aimed at in trout fly making, without reference to the manner of carrying them out in practice.

My opinions are much more puritanical than my actions.

Video meliora proboque, deteriora sequor.

Considerations of convenience often lead me to be content with something short of what I might, with more labour, accomplish. After all, when it is remembered that the trout, under advantageous circumstances, sees our fly for but one critical moment, we can easily believe that, after a certain stage is reached, each degree of

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closer resemblance to nature has a smaller value than the last, and that, if the main characteristics of the natural are expressed in the artificial, the latter may be considered a good one. Let us take an example: The medium Olive Dun has a body olive green down the back, olive yellow underneath, and with sides ribbed with both colours; but since the sides are most exposed to the fish's view, their impression on the eye must so predominate as to make it sufficient that the whole body of the artificial should uniformly resemble them.

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CHAPTER II.

ON HOOKS.

THE selection of a suitable hook upon which to dress a fly is of the first importance in more senses than one. There are probably many amateurs, and one or two professionals, who have had this fact unpleasantly borne in upon them. For my own part, the biggest trout I ever hooked in a river——; but there, the story is an old one. The fly, a neat Little Pale Blue, now reposes in my fly book, the hook broken behind the barb.

Care should be taken to have always plenty of the best hooks, in all sizes, that one is likely to need. The result is usually disastrous when one is forced to buy cheap hooks from the local hardware shop. Hooks of good material and temper, and properly enamelled* are all to be had from good houses by paying a fair price. The qualities mentioned are independent of one another, and are therefore comparatively easy to secure; but, as regards its remaining qualities, which are mainly of a mechanical nature, a good hook, to borrow Mr. Wells's apt expression, is "a creature of compromise."

Mr. Pennell, in his "Modern Practical Angler," was, I believe, the first who set himself the problem of attaining this compromise. Mr. Wells renewed the discussion in his excellent work, "Rods and Fly Tackle," presumably because he

* The enamelled hooks are the brown and the black. The blue are not enamelled, and are therefore not rust proof.

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did not find himself fully in accord with Mr. Pennell. And now I, an unknown writer, having also opinions of my own on the subject, must needs speak out my mind and survey the same ground that both my masters have measured before me, in the light that they have left behind them. I will follow Mr. Pennell's mapped-out mode of inquiry, as so much clearness is thereby gained.

To be perfect for fly dressing purposes, then, a hook should have:

1. A searching point.
2. Quick penetration, without tendency to rake.
3. Good holding power.
4. Strength.
5. Neatness and adaptability to form of fly.

A Searching Point.

Neither Mr. Pennell nor Mr. Wells appears to have given much consideration to this condition.

Fig. 1. Mr. Pennell's typical position of the hook after penetration.

At least it seems to have been inadequately distinguished from the condition of quick penetration, especially since, as we shall shortly see, the requirements of the two are entirely antagonistic.

Mr. Pennell states as the case of hooking "most common in practice, that of the hook having penetrated quite through the lip of the fish, so that the point protrudes." Mr. Wells, on the contrary, says: "It must not be forgotten

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that the problem is not to pierce an obstacle squarely across the path of the hook; but its point is to engage with an oblique surface, and when so engaged it should turn at once from its former path and bury downward."

There seems to be some contrariety of opinion here. Mr. Wells is evidently considering such cases of hooking as when the fly remains entirely inside the fish's mouth; for in the case assumed by Mr. Pennell, the lip, the object to be pierced, certainly is "squarely across the path of the hook." Both cases are undoubtedly of frequent

FIG. 2. In the above diagram the hooks are shown in an upright position. In practice they will generally be inclined over on their sides, which would make the necessity for a searching point to be still greater than is indicated. On the other hand, the hook will not often be drawn so directly across the lip, but rather it will meet it slantwise, which will affect the case in the opposite direction.

occurrence, and in both the advantage of a searching point is apparent. A hook designed to meet Mr. Pennell's case should be of such a form as to allow the point to get well down under the lip into the channel-like space between the lip and the tongue (Fig. 2), while one designed to meet Mr. Wells's case should as far as possible ensure that its point will always touch the flesh (Fig. 3), and readily explore any little cranny that may lie in its path.

There are two ways in which the point of a hook can be made "searching." One way is exemplified in the sneck and Kirby hooks. These

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are bent so that they cannot possibly lie flat, that is to say, the point is kerbed or turned out of the plane of the shank and bend. This renders the hook almost certain to "catch on" when jammed into an angle of the mouth or pressed between the lips, or the tongue and the palate. It must be admitted, however, that there *are* positions into which the hook may get, where kerbing is in every respect a disadvantage. The second method of exposing the point is simply to turn it away from the shank as much as the satisfaction of other conditions will allow, while keeping it in the *same* plane with the shank and bend; and, of course, a part of the wire behind

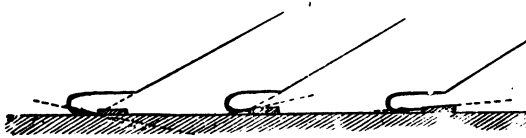

FIG. 3. Circumstances are exaggerated in this diagram also; but it is hoped that it will be successful in conveying the principles it is intended to illustrate.

the barb projecting beneath the point is highly detrimental to the latter's exposure. Of this the Dublin Limerick hook is an example.

QUICKNESS OF PENETRATION.

If anyone were to hold the point of a hook between his finger and thumb, and desire to push it into, say, a piece of cork, in what direction, with regard to the hook, would he apply a force in order to do this most easily?—Surely in the direction of some line through the extreme point, and lying between the upper and lower surfaces of the wire at the point. It will be noted that, when the proper direction is found, the point

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will penetrate precisely in this direction, and be in no way deflected. The inclination of this line, which we will call the *line of penetration*, to either surface, will, in general, be proportional to the amount of resistance acting on that surface. Hence in the ordinary hook with round sectioned

FIG. 4.

point, the line of penetration will be inclined almost equally to both surfaces (Fig. 4).

Now (Fig. 5) the force actually applied in hooking a fish is, during the first and critical period, approximately in the direction P S, and, as the point penetrates, gradually veering towards the

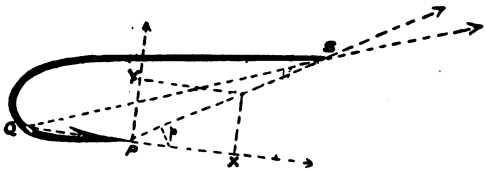

FIG. 5.

P S—Initial line of pull. P X—Penetrating force.
Q S—Final line of pull. P Y—Tearing-out force.
p—Angle of penetration.

direction Q S. And this force, P S, in accordance with the mechanical law, known as the "parallelogram of forces," is equivalent to two forces acting in the direction P X and P Y, and of magnitudes proportional to these lines. The effect of the former is, as we have seen, to make the hook

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penetrate in its own direction; while the latter, which is at right angles to the upper surface of the hook point, tends to tear it upwards and out of the flesh; but if the resistance is sufficiently great, it will do little more than slightly "spring" the wire and create extra friction. It will be seen that a hook's penetrating power decreases as the angle *p* increases, and increases with the ratio of P X to P Y, or the ratio of the useful force to the harmful. It is, of course, also affected by the degree of sharpness and form of the point, and by the prominence of the barb.

In Mr. Pennell's diagrams the line of penetration is shown lying on the under surface of the hook-point. Mr. Wells, in correcting this error, goes to the other extreme, and asserts that the upper surface in an ordinary hook "determines its promptness to engage, *as well as the direction in which it will follow.*" The italics are mine. I quote the following from "Fly Rods and Fly Tackle":—

"Take a common carpenter's chisel and apply it to a board, with the bevel down and in contact with the board. The bevel here guides the edge, and forces it to advance parallel with the surface upon which the bevel rests; there is not the slightest tendency to bury. It would seem to follow from this that the hook shown in the first of Mr. Pennell's figures (Fig. 6) is by no means theoretically perfect as to penetration (or promptness 'to bite,' which is the idea I understand Mr. Pennell intends to convey), but, on the contrary it is both theoretically and practically imperfect in this respect.

"Now let us reverse the chisel and apply it to the board, with the bevelled side uppermost, and at such an angle that the flat side (which will then become what we have termed the 'following' side), does not touch the board. Here we have an exact reproduction of the penetrating point of a fish hook, one governed by exactly the same laws. Attempt to cut with the chisel held in this position! It buries at once in the board and comes to a halt. The 'advancing' edge, the bevel, guides and forces it downwards."

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This last statement, "the advancing edge," &c., is all that I can find in Mr. Well's discussion by way of proof, that it is the upper surface of the hook point (or, as Mr. Wells's calls it, "the advancing edge"), which *determines* the direction of penetration. If his experiments be carefully performed, it will be seen that the under surface

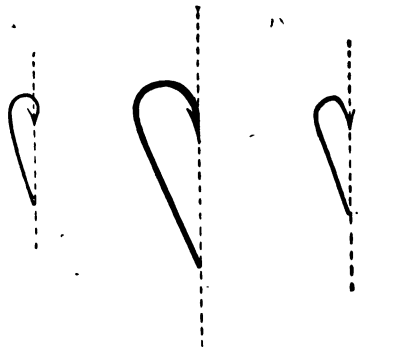

FIG. 6. The largest hook in the above diagram is referred to by Mr. Pennell as "mechanically perfect so far as penetration depending on bend is concerned." It is not really so. The smaller figures illustrate such mechanically perfect hooks out-barb and in-barb. The out-barb hook in existence is the nearest approach obtainable to the perfection of which Mr. Pennell speaks.

(or "following edge") has quite an equal influence, and that the line of penetration, as I have already said, lies between the two surfaces. The reason that the chisel does not bury in the first experiment is because its point is not "searching," and is unable to insinuate itself behind any of the minute roughness of the wood, and so get a "catch on." The result would be

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the same in the second experiment if the wood were sufficiently hard and smooth.

Holding Power.

Whether a hook that has once penetrated will hold or no is chiefly a matter of whether the resistance of the flesh is great enough to prevent the hook's tearing out. This, again, depends on the amount of tearing-out force—which is least with a hook of quick penetration—the area and flatness of the upper surface of the wire, and *the depth to which the point has penetrated.*

It is obvious that, provided a hook penetrate at all, the greater its angle of penetration, the deeper will be the hold which it will take. So that, within certain limits, it is true that the better a hook's penetrating qualities the weaker will be its holding power. Figs. 2 and 3, in which the directions of penetration are marked, will illustrate this important fact.* It is also plain that there should be sufficient wire directly behind the barb to afford a hold of sufficient depth, whatever be the direction of penetration.

Concerning the barb itself, I think that a very prominent one is quite unnecessary. A few experiments will soon convince anyone that a very small increase of prominence will necessitate a very considerable increase of force to make the hook penetrate as far as before, so that in fly-fishing for trout with small hooks a very prominent barb would often defeat its own ends. When the point is driven properly home, the barb is not likely to be called upon, and where a

* It will be clear from the diagrams in this article that the smaller the inclination of the line of pull to the surface of the flesh to be penetrated, the more effective in every way will be the "strike." Hence, at the moment of striking the rod point should be as low as is convenient.

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slightly barbed hook would not secure a good hold, one with a prominent barb would be unlikely to penetrate over the barb at all. Of the in-barb and the out-barb hooks, the former will usually lock itself more securely in the flesh, since the more pressure is on the inner or upper surface of the wire. However, it is probable that in the majority of cases either barb would fulfil its duties satisfactorily enough. If the out-barb loses its hold it is more likely to be because insufficient attention is paid in its design to the requirement of deep penetration.

Mr. Pennell gives as the *chief* criterion of the holding power of a hook one which I cannot think is of any real importance at all. After stating what I have already quoted regarding the typical position of a hook after it has penetrated, he proceeds to say:—

"In this case it is evident that, when once hooked, the nearer the point approaches the shank of the hook the less chance must the fish have of escaping. This will be seen by carrying the principal to the extreme limit—and assuming that the point was so bent in after hooking as actually to touch the shank—the fish's lip would then be inclosed in a complete triangle, from which, of course, there could be no possible escape."

This style of argument (viz., from one limiting case) is a very deceptive one, and by no means conclusive. It matters little to most of us, for instance, whether we have a doorway 8ft. high or 10ft. high by which to make our exit from a room, and if we find we can *enter* without inconvenience we should scarcely be inclined to have any further misgivings. And yet we could prove the contrary of this just as logically as Mr. Pennell reasons above. Since, if on our entry the doorway were to close up into a mere crack in the wall, it would be useless as a means of egress! A design for a hook that does not provide sufficient

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—and much more than sufficient—room for the passage *in* would indeed be an absurdity, and if there be no mechanical arrangement, such as a point guard, or other similar abomination, there will clearly be plenty of room for passage *out*. Mr. Pennell is surely inconsistent in considering this alleged influence of the hook's shape in a contingency that *might* arise (viz., the hook's slipping backwards after penetration), and ignoring the fact that precisely the same influence has, *à fortiori*, a right to be included, when he is examining the circumstances affecting penetration itself.

Strength.

It is an old axiom that the strength of a chain is that of its weakest link, and it is equally clear that the strength of a hook is that of the part where it is most likely to break. There are two points which require examination—behind the barb, where too much wire is often cut away; and the point at the greatest distance from the line of pull, which is subject to the greatest strain. The thickness of the wire behind the barb, measured parallel to the line of pull, is of far greater importance than its thickness at right angles to this line. Messrs. Hardy take advantage of this principal in their "harpoon" hook, and cut the barb (in this case the barbs), not from the upper or under surface, but from the near and off sides of the wire. The same effect might be got by flattening the wire at these sides before cutting the barbs in the ordinary way.

Fig. 7 illustrates geometrically how the tendency of the hook to break at the upper angle of the bend, is affected by its distance from the line of pull. It will be observed that I have considered the final line of pull, since the tension of

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the line does not usually reach its maximum till the hook has penetrated as far as it will go.

NEATNESS AND ADAPTABILITY TO FORM OF FLY.

If we regard only—as do many anglers of my acquaintance—the adaptibility of a hook to the form of the fly, I think we should prefer those hooks with perfectly straight shanks, and as much

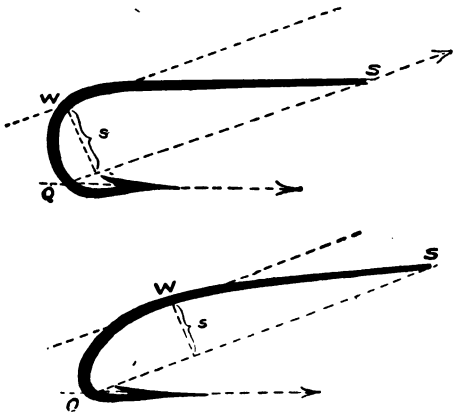

FIG. 7. Q S—Final line of pull. W—Weakest point so far as position only is concerned. s—Line of strength, with the length of which the likelihood of the hook to break at W increases.

of the wire in the shank as possible, or those with shanks curving slightly away from the point, such as Mr. Pennell's eyed sneck hooks. These, by the way, have the advantage of not pinching the gut at the head of the fly, as the angle which the gut when strained here makes with the wire is so small. Unfortunately, it seems that it is only to eyed hooks that the principle is applied!

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In dry fly fishing a shank of one of the above-mentioned descriptions is of more than artistic importance. For that of a good floating hook must allow *as complete contact as is possible with the surface of the water.*

An Attempt at a Compromise.

The conclusion to which the above dissertation leads is, that there is no hook in use so vicious in

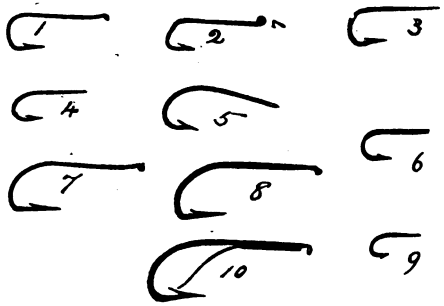

Fig. 8. 1. Down-eyed Pennell sneck with upturned shank. 2. Hall up-eyed. 3. Sneck. 4. Kirby. 5. Dublin Limerick. 6. Round. 7. Down-eyed Pennell Limerick with upturned shank. 8. Down-eyed Pennell Limerick with straight shank. 9. Nicolay out-barb. 10. Hook with guarded point (not used by sportsmen).

construction but that something may be said in its favour. For my own part, I prefer, of ordinary hooks, the sneck and Kirby bends; and of eyed hooks, Mr. Pennell's eyed sneck hooks, already referred to, and Mr. Hall's.

I have devoted considerable space to the foregoing discussion, because it is important that one should be able to judge "the points" of one's tackle, and because the "contemplative man"

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has an interest and pleasure in so doing; yet, lest it be said that no practical suggestions have been evolved, I will proceed to describe the ideal hook of my imagining. It must be understood that I in no way assume the right to speak with authority, and that I am quite open to the conviction of being in error, either here or elsewhere. On this understanding I present the drawing below (Fig. 9).

The reader will see for himself that the characteristic lines and angles shown are as good as those of most hooks in use at the present day, while superiority may be claimed as regards the exposure of the point. The last named is a little kerbed, so that penetration is a little greater

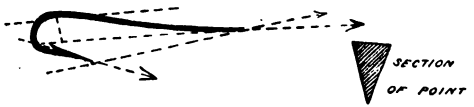

FIG. 9.

than that shown on the plane of the paper. The method of sharpening the point resembles that employed by Messrs. Hardy for their "harpoon" hook, but in mine the upper surface is flat, and there is only one cutting edge (viz., that underneath) of any sharpness, while in their's there are three. It is *just possible* that, while all cutting edges aid penetration immensely, those at the sides might start a tear in the flesh, and aid the hook's pulling out. The underneath cutting edge is free from this objection, as, once the hook has penetrated, there is very little pressure where the cut has been made, and, in any case, downward cutting cannot do much harm. This mode of sharpening also makes the point likely to get

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into any little hollow or furrow that it might otherwise escape. Until I saw an actual specimen of Messrs. Hardy's hook, I imagined that my idea of sharpening the *under* surface of the point was original. The sectional drawing in their catalogue is, or was, incorrect, and shows only the sharpened sides.

The vexed question of eyed hooks *v.* hooks to gut may safely be left to take care of itself.* The advantages of the eyed hooks on the score of strength is obvious, while the advantages claimed in respect of economy and convenience can be readily referred to the test of direct experience. Personally, I consider that flies to gut are made more easily and pleasantly than those on eyed hooks. But this may be a matter of practice. There are probably many who hold the opposite opinion.

* Flies on eyed hooks are almost invariably used in dry fly fishing. In the north flies on gut used wet are more generally in use.—Ed. *Fishing Gazette.*

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CHAPTER III.

ON MATERIALS.

I HAVE now arrived at the strictly practical portion of the present series of articles, and am not altogether sorry. Theory has its fascinations for me, likewise its dangers, as have out-of-depth waters for a youngster who has imperfectly learnt to swim, but when I am content with practice I have, at any rate, my fords and stepping-stones, of which I have myself made use for years, and over which I have good hopes of being able to pilot others. It gives me confidence to feel that for the rest of my journey I shall always—or nearly always—have at least one foot on the ground.

The subject of the present article is one of peculiarly wide scope. There is scarcely a feather or fur that could be said to be useless for fly making, and furs and feathers would by no means complete the list of what we should desire for the purpose.

The first material we shall require is tying silk, and Pearsall's "gossamer" tying silk, which is now widely known and used, is the best with which I am acquainted. It is sold in a very convenient form, viz., on box-wood reels of small height and relatively large diameter. The silk itself is very fine, smooth, hard, and strong, in fact, just as it ought to be.

Next in order come the materials for wings. and here I will make an attempt to roughly classify the most useful as to their colour.

Many flies—notably spinners and small gnats

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—have wings almost as transparent as crystal. Mr. Francis Francis, in describing a dressing of the Jenny Spinner, writes as follows :—

"The wings—ah! those wings! What shall we do to imitate their clear, delicate, watery transparency? The tips of two very pale light blue hackles might, perhaps, come near. The usual way, however, is—as Theakstone and Ronalds recommend—to dress the fly hackle fashion, or buzz, as it is termed.

* * * * * *

"If this fly could be well imitated it would be a valuable one, but hitherto our imitations are but sorry affairs; the fish seem to know it too, for, although rising greedily at the natural fly, they do not greatly favour the imitation, even at the best, as they will do that of flies more easily imitated."

The Jenny Spinner has by no means ceased to be a puzzle to fly dressers, but we have certainly made some progress since Mr. Francis wrote. There are several substances which imitate the wings very well as to appearance, but which are deficient in durability, and are generally much too brittle and stiff. Fish scales have been very much used, those of the pike especially so. I have never seen herring scales recommended, and yet they are, perhaps, the most easily obtained of all, and are finer in proportion to their size, and brighter than pike scales or any others that I have hitherto come across.

I think, however, that the outer membrane of a rook's quill, to which I attempted to draw attention in the *F. G.* a year or two ago, will be found as good, if not better, than any substance at present used. The rook quills for this purpose should be moulted ones, gathered from beneath the trees of a rookery, and it is important that they should not have lain long in wet weather.

Cut off about 1½in. of the root end of the quill, and steep it for a few minutes in hot water.

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Then slit the quill straight down the middle, turn it inside out, detach the outside membrane at the extreme root end with the thumb nail, and tear it off the quill. (Fig. 10.)

The membrane obtained will be of a good size, and will take a dye readily. It will be possible to get a small piece of almost any degree of fineness required. For although at the extreme root end it will be somewhat stiff and thick, it tapers away in the opposite direction to the fineness of the wings of the natural fly. In

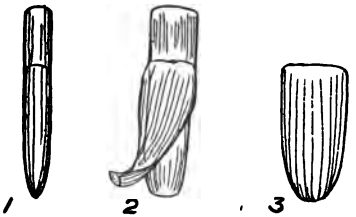

FIG. 10.

1. Quill intact. 2. Quill split and membrane partially separated. 3. Membrane as used for wings.

dry fly making it can be used double, *i.e.*, four thicknesses going to form the two wings.

For perfectly white wings, the swan's wing and tail feathers are generally used. These are quite fine towards the edge. Aylesbury duck feathers are also good.

Wings with white tips and roots almost black are obtained from the secondary (Fig. 11) wing feathers of the mallard. Plover tail feathers afford wings with black tips and white roots. The small feathers found on the inside of snipe and golden plover wings, as well as those of some other birds, may be used for wings with white

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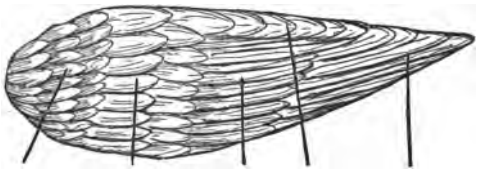
tips and light dun roots. The web of soft fibre is not, in this case, cut from the quill, but the tips of the feathers are used intact.

Light stone blue wings are supplied by the wing and tail feathers of the coot. I may here remark that there is often a great difference in the shades of the inner and outer sides of feathers. For instance, of the coot's feathers just mentioned it is the inner side that is of a light stone blue, the outer side being of a medium dun in young birds, and of a medium to dark iron blue in older specimens.

For light stone blue wings I believe that the



Lesser wing coverts. Greater wing coverts. Secondaries. Tertiaries. Primaries.

FIG. 11.

feathers of the sea gull and sea swallows are also used; but those of the coot are not very scarce, are easy to work with, and make a very beautiful wing, which dries readily. The feathers of some of the common tame blue pigeons resemble those of the coot as to colour.

Snipe wings are extremely useful. They are of a cold medium dun colour on the outer, and a light dun shade on the inner side. They are, perhaps, the best feathers with which to imitate the duns appearing in early spring.

The starling is the bird beloved of fly dressers —"the fly dresser's darling," one is tempted to

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call it. It is extremely plentiful, and there is scarcely a feather on its body that is not of use. Its wings are of a warmish dun shade, and vary a good deal, according to the age of the bird. Those of a young specimen are of a peculiar shade of bluish dun, run into brown, and edged with yellow, while those of the oldest birds have a distinct shade of red on the outer side.

Feathers of a reddish shade are also supplied by the water-rail and land-rail (corncrake); the red is more pronounced in the land-rail's feathers. Dark cinnamon wings may be imitated with the underneath tail feathers of the common partridge.

The wing feathers of the thrush and redwing (called "felt" in Ireland) are of a rich tawny olive brown, running into a bright tawny yellow towards the edge and root end of the secondaries.

For iron blue wings the tail feathers of the tom-tit are generally used. Tail feathers of the merlin hawk have been strongly recommended by the late Mr. John Beever ("Arundo"). I have never possessed any myself, so I cannot speak of them from experience. Breast feathers of the coot and water-rail are good as to colour, but are coarse and soft. The various members of the swallow family—swifts, martins, &c.—all supply nice wings, with clearly defined edges. They are, for the most part, of a dark dun or blackish-brown colour. Feathers of the darkest shades of this colour are also to be had from the waterhen and hen blackbird. For mottled wings, we have the wing and tail feathers of the woodcock, which are of a dingy brown colour, splashed at the edge with blotches of tan. The wing and tail feathers of the brown owl are of a very dark dun shade, almost black, at the roots, dovetailed into white at the edge.

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Of speckled feathers, those of the pheasant's tail are the most generally useful. They make very natural imitations of the wings of the March Brown and of some other well known flies. Speckled mallard feathers, brown and grey, are also used in large quantities, especially in Ireland, for lake and white trout flies. Barred teal feathers, which are of a much darker shade than grey mallard, are correspondingly favourites in Scotland, as are also the bronze-coloured tail feathers of the turkey.

Grey mallard and teal feathers are used, dyed, for May Flies; also guinea fowl and Rouen drake feathers, which are recommended by Mr. Halford. Feathers of the wood (or summer) duck, a native of South America, are used, undyed, for the same purpose.

Next to the wings come the whisks or tails. These are simply two fibres cut from a large hackle, or saddle feather of the cock or hen, or from any fine and long plumed feathers of suitable colour.

The wing coverts and back and breast feathers of the coot and water-rail, and the feathers from beneath the tail of the sparrowhawk, afford a good assortment of iron blue, brown olive, and yellow dun fibres which are difficult to obtain elsewhere. Unfortunately, they are not very durable.

Golden pheasant feathers, both toppings and tippets, are also largely used for whisks, and make particularly attractive ones for fancy flies. The feathers from the back and sides of the mallard and drake teal, already mentioned in this chapter, are also useful.

I have found that many varieties of hair, human especially, make most natural looking whisks. The whisks of various animals, chiefly rats and rabbits, are recommended. They are

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not, as is often supposed, unduly stiff at the ends, but are generally difficult to obtain in quantity.

The long feelers projecting from the heads of many of the down-wing flies are, for the purposes of the fly dresser, analogous to the whisks, and may be imitated by the same range of material.

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CHAPTER IV.

ON MATERIALS (*Continued*).

The range of materials for bodies is greatly varied, and apparently very complete. Some thirty years ago, floss, herl, wool, dubbing, and tinsel were almost exclusively employed, and even at the present day great quantities are used, but quill, horsehair, and indiarubber are to a great extent ousting them from favour.

Floss is simply raw silk, dyed, of course, in most cases, and a great number of strands laid on together. It is sold in skeins, from which one need not trouble to unwind it, as a small piece can be easily cut away when required and split into several lengths of the desired thickness. Floss is very easy to work with, and makes a very pretty body; but it can scarcely be recommended for flies with light coloured bodies, as it darkens so much when wet.

Herls are woolly-like strips of plume, taken from such large feathers as are obtained from the ostrich or peacock. They make stout, hairy bodies, and are very much used, but are not a favourite material of my own. Of the peacock's herls most in demand, those from the lower part of the tail are of a red bronze colour, while those from the "sword" feathers are of a bright metallic green. Herls from the wing of the heron, and the tail of the turkey and pheasant are sometimes used.

Wool, the hard crewel wool especially, is a good material. It is what I generally use for pale

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yellow bodies, as it does not darken in the water, nor does the variety named soak very readily. It should be untwisted, split into several lengths, and used in the same manner as floss.

The term dubbing relates less to the kind of the material than to the manner in which it is used. It is generally fur or wool teased out, spun on a length of waxed tying silk, and then wound round the hook shank in the same manner as are other body materials.

Water-rat's fur, and fur from the hare's ear are favourite dubbings, but the very fine yet hard-fibred fur of a young seal is acknowledged by all who try it to be the best dubbing obtainable. It is easily spun, and beautifully translucent. Many other varieties of fur—rabbit's, mole's, and young fox's—are used; also the puppy hair from young setters or collies makes fairly good dubbing.

It must not be supposed that it is necessary to keep a different shade of the material for each different shade of dubbed body that one will require to make. Many shades are produced by the thorough mixing together of two or more other shades. Thus a blue and a yellow will make a green, and a little red and brown added will make an olive green. Practice and an eye for colour are all that is needed to give the necessary skill.

Obviously dubbing is particularly useful for such flies as have rough hairy bodies, and it is also almost universally employed for large lake flies, its advantage here being that a very little weight of it is required to form a large body. There is, however, nearly always a want of definition about a dubbed body which would seem to show dubbing to be unsuitable for the dressing of ordinary duns.

Horsehair is a good material, hair from both

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mane and tail being used; the latter more commonly, as it "ribs" so nicely.

I have recently turned my attention to a new material, which I believe to be a very useful one. It is roffia grass, used by gardeners to train plants and make up bouquets. It is to be had of a very pale cream and of a pale ginger colour. The thin tape-like substance should be split, a thin strip torn off it, tightly twisted, and then wound on the hook shank. Used thus it resists the water for a long time; and a thin coat of varnish will make it still more impervious. It ribs well, the laps closing up well together; it also takes a dye readily, and is almost unbreakable.

Pure unvulcanised india-rubber is, in my opinion, the best all round body material that we have. It has just that fresh, juicy appearance which is the distinctive characteristic of living matter. It takes a dye pretty well, and can be used either for light bodied flies (dressed detached), or for dark bodied flies wound in the usual way.

It is sold in lumps, nicely squared up as a rule, and should be first cut into very thin slices of about 1in. long by ½in. broad, and then lengthwise in very thin strips. A piece of cork of about 2in. square, sandpapered perfectly flat on both sides, makes a good cutting board; and the best tool that I know of is an old razor ground quite thin in the blade, which should be kept wet while in use. Stropping is necessary now and again, as the rubber looks so very much better when cleanly cut. The strips should be softened in hot water, or by being rolled between the finger and thumb, or moistened with turpentine, before being pulled out; neglect of this may also give them a ragged edge.

Quill is, without doubt, the material most used for small flies at the present time. It shows a

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well defined rib *of colour*, which is a feature of certain natural flies, and an effect not easily rendered in any other manner. It is also impenetrable, and unaffected in colour by the water.

Quill, as the term standing alone is generally used, and as I have used it here, means herls from the "eye" part, or immediately below it, of a peacock's tail, with the soft fluff scraped away. To do this: *Cut* the herl from the tail feather, or, at any rate, trim it squarely across at the root end after tearing it from the shaft. Now hold it between the left forefinger and thumb, leaving about 1in. of the root end projecting to the right (Fig. 12). Then scrape it, from A to B, between

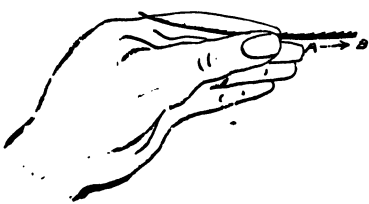

FIG. 12.

the right thumb nail and ball of the right forefinger, and at intervals between the right forefinger nail and ball of the right thumb, so that both sides of the quill may be treated in the same manner. Some may prefer to use a blunt knife instead of their nails.

If the length stripped be not sufficient, a longer hold may be taken and a longer length scraped. It is best not to take too long a hold at first, as the quill is apt to break. Indeed, in any case, the beginner has generally some difficulties in avoiding a breakage. Only practice—again that magic

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word—is required to teach one to properly regulate the pressure and speed of scraping. A previous steeping of the herl in boiling water will somewhat facilitate the operation. The herl should then be partially dried before being scraped.

Peacock herls from the lower part of the feather have shiny brown quills, which are occasionally useful, and, besides peacock herls, those of the ostrich are sometimes employed.

Condor and adjutant herl quills are recommended by Mr. Halford, and are certainly excellent; but Mr. Halford must be in a peculiarly fortunate position for obtaining them. Mr. Hardy, of Alnwick, was good enough to send me a small piece of condor feather, originally in the possession of Mr. Halford. He told me at the same time that the difficulties incident on "catching your condor" are too great to allow condor feathers to be a marketable commodity. I believe that adjutant feathers are also very scarce. There are probably many large and coarsely plumed birds of the eagle, vulture, or crane families, for instance, which have herl quills more or less suitable for fly dressing. Those of the heron have been used.

A piece of quill of a different class, for body material, may be torn from almost any wing or tail feather, in the following manner:—

Tear off the webs of feather from both sides of the shaft, thus removing along with them that part of the quill from which they grow. Next cut off the tip of the feather and split it at the smallest end with the scissors' points. Then tear the split ends apart, and scrape the insides of the two strips of quill thus produced.

If the web, instead of being torn off, be cropped closely with the scissors from a point near the tip to the root end, the quill from which it has been growing may be used as body material.

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To remove this, take a firm hold of the web which has been left on the tip of the shaft, and start the tear with it, taking a shorter hold of the quill, to avoid breaking it, as the tearing proceeds.

Another kind of quill is that obtained by stripping a long hackle or saddle feather of its plume on either side. It makes a very natural

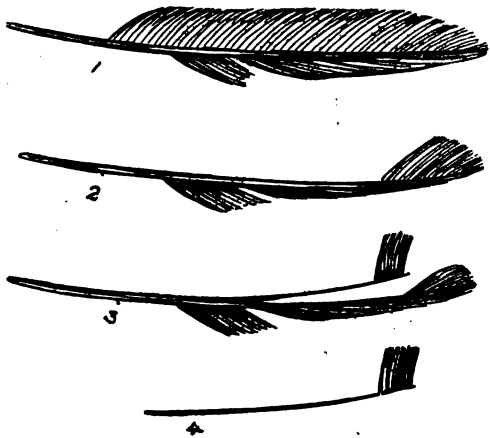

FIG. 13. 1. Feather entire. 2. Feather, with web closely cropped, 3. Feather, with quill partially detached. 4. Piece of quill obtained.

looking body, which, so to speak, tapers itself automatically in the forming; the quill used being tapered, and so the joints of the body becoming wider and thicker as the winding proceeds from tail to shoulder. A friend, to whom my first acquaintance with this material was due, makes a very beautiful red spinner of the

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shaft of the saddle feather of a dark red game cock.

Grass and split pieces of corn blades, &c., are sometimes convenient materials to use for green bodies, and look uncommonly well. They retain their colour much longer than might be supposed. I once sent the Editor of the *Fishing Gazette* a fly which I had tied two years before, and which had figured on the cast. The colour of the body, which was of one or other of the materials named, had faded very little indeed.

Tinsel is used in very large quantities, both for the whole body of the fly and as a ribbing. For the former purpose flat tinsel is employed, and for the latter fine round tinsel is used for small flies, while for large lake flies the flat or oval variety is necessary to give a sufficiently obtrusive effect. I often wonder that tinsels for fly dressing are not made in colours. One would think that red, yellow, blue, and green tinsels would be just the thing for salmon and lake trout flies, and I feel sure that they would also be useful for such of the small trout flies as have specially bright bodies. We need not, however, be at a loss for a substitute, as there is a method of making a bright-bodied trout fly, which might well be considered an improvement on the coloured tinsel idea in every respect except that of simplicity. The idea was given me when I was a beginner in fly dressing by a friend who had found it very successful, and since then I have likewise proved its utility on many occasions. The method was as follows: First to lay a foundation of very fine flat tinsel over the body, and then to cover it sparingly with floss silk or wool of the proper colour. In this way, and with the use of the transparent, quill-membrane wings, I have made some of the best green and yellow midges that I have ever seen.

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We must now pass on to the consideration of hackles and such other materials as are used to imitate the fly's legs.

With dubbed flies the dubbing itself, picked out from beneath the shoulder with the needle, is sometimes considered to be sufficient. Again, a few hairs of some kind or other, tied in with the tying silk and worked into place, are also occasionally substituted for hackles. Small feathers, such as those from the wren's tail, and from beneath the wings of certain birds, also black plover toppings, &c., are used in large quantities, but scarcely call for separate notice here, as the utility of most of them is not general, but limited to particular dressings of particular flies.

Of neck feathers, that is to say, hackles properly so called, we have an endless variety. The speckled brown hackles of the partridge are often used for March Brown flies. Hackles of the snipe and golden plover, which in many respects resembles the snipe, also grouse hackles, which are of a more reddish tone than the others, are in demand. Dotterel hackles are rarer, but are considered almost indispensable in the north of England. They are of a light dun in colour.

The bright iridescent hackles of the starling, which are of a glinting shade of dark metallic green and rose colour, as looked at when on the bird, make excellent black hackles. The duller feathers of the hen, and those taken from a lower part of the neck of the male bird, are also useful. I have found it extremely difficult to obtain good black hackles from poultry, of a size suitable for the very small flies.

The jungle cock, so much esteemed by dressers of salmon flies, supplies badger hackles useful for trout flies, though sometimes rather coarse in the quill.

It is from poultry that the great majority of

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hackles used in fly making are obtained. Those of the cock are the brighter and the harder in the fibre, but the hen is looked to for certain colours, as, for instance, ginger and black. Honey dun, blue dun, stone blue, yellow dun, and red hackles, are best from game birds, but, with the exception of the last, are very difficult to obtain. Blue hackles are also to be obtained from Andalusians; white, cream, and yellow from Leghorns and Dorkings; buff from Cochins; also excellent hackles of all shades may often be obtained from common barndoor fowl. Bantam hackles may also be recommended. The best times to collect hackles are at the beginning and end of the year.

The nomenclature of hackles is somewhat uncertain, and without the aid of colour it is not easy to impart to the novice the ideas attached even to the more definite terms with which we are provided. Nevertheless, the subject must not remain untouched.

Red, as applied to hackles, of course, means "foxy" red, and the darkest and glossiest shade, which is much in demand, is generally called "dark red game," being best obtained from a cock of the same designation. The palest and most yellowish shades of red are described as ginger.

The term "dun" refers to a dingy brown or mouse colour, with its darker and lighter shades, of which the fly dresser sees a great number.

The remaining terms, denoting hackles of one colour only—black, cinnamon, &c.—are unmistakable; but many hackles are of two or more colours combined and distributed in different ways. The more important of these must now be noticed.

Badger hackles are black or dark dun in the centre, and white or cream at the edge. Honey dun and brassy dun resemble badger hackles as

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to distribution of colour, being dark dun in the centre, and of the colour of liquid honey or barley-sugar at the edge.

Red furnace hackles are black in the centre, black at the extreme edge, and dark red between the edge and centre. In white furnace hackles, white takes the place of the red, otherwise they are the same as the red furnace.

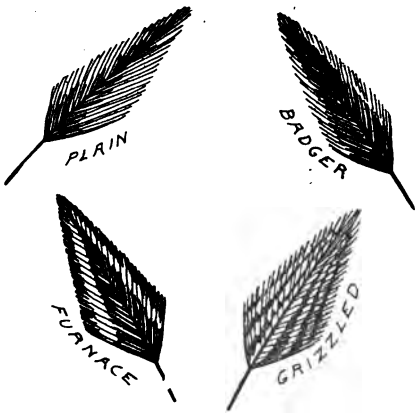

FIG. 14.

Grizzled (also called cuckoo and marley) hackles have each fibre composed of alternate short strips of light and dark colour; occasionally they are to be found edged with yet another different shade. There is a large variety of grizzled combinations.

Mr. Bambridge, of Eton, keeps an excellent assortment of all varieties of hackles, and other materials, too, for the matter of that, and will be

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pleased to send a set of samples, returnable, of course, to intending purchasers. For those who have to buy their hackles no arrangement could be more satisfactory, and I feel sure that many will be glad to avail themselves of it.

With regard to the shape of hackles, I personally am not hard to please. For wet flies, so as the feather be clean, not draggled, of the proper size and colour, and fairly durable, I ask for nothing more. For dry flies it is certainly desirable that hackles should be long in the quill and relatively short in the fibre, though this may be obviated by using two hackles for one fly. Mr. Halford expresses some regret at the

FIG. 15.

Hackle referred to by Mr. Halford as "geometrically perfect."

impossibility of obtaining what he calls the geometrically perfect hackle (*i.e.*, one whose fibres taper regularly and to an infinitesimal length from root to point); but, for my part, I have no such quarrel with nature, and venture to think that for ordinary flies, hackled at the shoulder only, the advantage of such feathers would be expressed by a minus quantity, while, for flies hackled all down the body, it would be of doubtful existence, and merely conventional at the best.

Having collected our materials, the next problem is how to store them. Our requirements are as follows. The materials must be kept clean and free from mites, &c. They must also be kept separately classified, so as to be reached at a

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moment's notice; and, as is equally important, the stowing away of them should be made as simple as possible, otherwise all attempts at

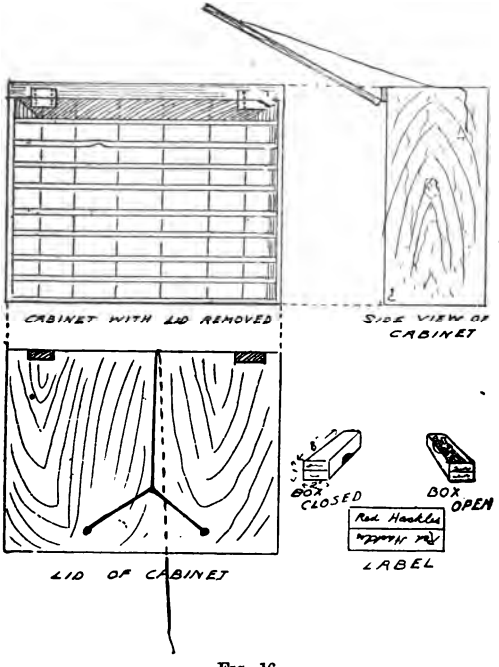

FIG. 16.

proper classification will probably, after a time, be abandoned altogether. All this being considered, a nicely-made cabinet, with some sixty good sized drawers, and stained with some very light

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colour, will be acknowledged as hard to beat. I do not possess such an article myself, but I have a very fair substitute for it. The essential features of this are illustrated. (Fig. 16.)

The framework is simply a shelved box, with a lid that can be raised upwards, and adjusted at a suitable angle by means of a piece of string, so that it can be used as a reflector if desired; and stout cardboard boxes, of the shape illustrated, take the place of properly made wooden drawers. It will be seen that the lids of the boxes may be reversed, so that the latter can be used as open drawers; and the labels should be arranged as shown in the figure, so as to be easily read when the lids are in this position.

The boxes should fit the shelves exactly in an up and down direction, but sufficient lateral room should be allowed for the fingers to be inserted on either side of any box so as to remove it easily. Of course, the other boxes on the same shelf are first to be pushed on either side, so that less than one inch of extra space in each shelf will suffice. This space can be padded when one is travelling with full paraphernalia.

For the above design I am largely indebted to a *Fishing Gazette* correspondent of some five years ago.

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CHAPTER V.

DYEING, BLEACHING, AND OTHER RECIPES.

Those who have studied the older books on fly dressing will have noticed that, with regard to the subject of the present chapter, one of two alternatives was generally adopted. Either the author abjured dyes altogether, asserting them to be wanting in permanence, or destructive to material, or he would find it necessary to give such a large number of recipes as would take up more than half of the space devoted to his entire subject.

The modern writer fortunately has no need to adopt either course. There are now many excellent dyes in the market, made in a great variety of tints, and free from either of the objections mentioned; so that a hackle dyed the correct colour is, as being dyed, in no way inferior to a self-coloured one, except that its natural grease must generally have been partially removed. This disadvantage, however, is of lesser account now that it is customary to oil the hackle of a floater.

The dyes of which I have had most experience are those made by Messrs. Crawshaw, Fann-street, Aldersgate-street, London. Theirs is the only firm which has catered specially for the wants of fly dressers, having produced a set of "Special Dyes" for our purposes. Our thanks, also, are more immediately due to Mr. Halford for having proposed this idea to Messrs. Crawshaw, and furnished patterns the special colours. Each dye has received Mr. Halford's approval, and

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therefore may be fully relied upon. They are sold in bottles, 1s. each, and the following is the list of colours: Green olive, medium olive, brown olive, green drake, grannom green, slate, iron blue, canary, and red spinner. With this set, and say, a claret and a brown from the ordinary list, the trout fly dresser should be in a position to dye any shade that he will require.

Of course, in dyeing, as in the other processes of the art, it is a mistake for the amateur to tie himself down to too hard and fast rules. The end aimed at should always be in view. If a clear idea of the desired colour be in the mind, all is likely to go well. The manner of attaining to this idea is tentative for the amateur at least. Blending is often useful, even at a late stage of the process; at the same time, it is only fair to add that Messrs. Crawshaw's "Special Dyes" are so well and accurately compounded as to remove all necessity for blending, as far as it is possible to do so.

The directions issued with the dyes are as follows:—

Thoroughly wash all the feathers, &c., before dyeing, in a weak solution of ordinary washing soda in boiling water, so as to remove the grease; then rinse well in cold water to remove all traces of the soda. Dissolve the dye in boiling water, using for a quart of water about the quantity of dye that can be taken up on the point of an ordinary penknife, stir thoroughly until dissolved, then put in the material to be dyed, and keep stirring until the required shade is obtained. All the colours, with the exception of the canary, will require a little vinegar or other acid to be added to the dye bath, in order to fully bring out and fix the colour. The acid should be added after the feathers have been in the dye-bath for a short time.

When fully dyed wash the feathers in cold water, and dip them for a few minutes in a weak solution of alum —say, about ½oz. to a quart of water. This last process will fix the colours, and make them fast.

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For the acetiser, instead of vinegar, I sometimes use very dilute vitriol; and, as often as not, instead of using the alum, as directed, in a separate mordant bath, after the dye bath, I use it in the dye bath itself. This change may not be an improvement, but I have not found it in any way detrimental, and as it is often important to be able to dry hackles at short notice, any simplification or shortening of the process will be welcome.

With this very end in view, I have devised a simple centrifugal machine and colander combined, which I have had in use for some time, and which I should not care to be without. It consists of a somewhat heavy colander of perforated galvanised sheet iron, with a bottom of sheet tin not perforated. The latter is overlaid outside with sheet lead, and the whole colander weighs about ½lb. A steel shaft, pointed at the lower end, protrudes a short distance through the centre of the bottom, and is soldered to it. It also rises an inch or so above the level of the rim of the colander.

The frame in which the colander revolves resembles a large tin mug, a vessel as common in Ireland as it is rare in England. The bottom of this is also weighted with sheet lead, and it is mounted on three small legs. The middle of one side of this "mug" is cut away, as shown in the figure. Inlaid in the bottom of this frame is a small, hard steel step, in which the lower end of the shaft revolves; and a bearing, also of steel, and detachable as shown, keeps the shaft in an upright position. A perforated tin lid, fitting inside the colander, and having a hole in the centre just large enough to allow the shaft to pass through it, is also added, to prevent the shaft from rising out of the step, and also to relieve the colander and shaft, when revolving

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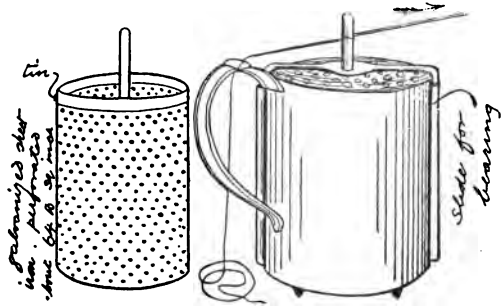
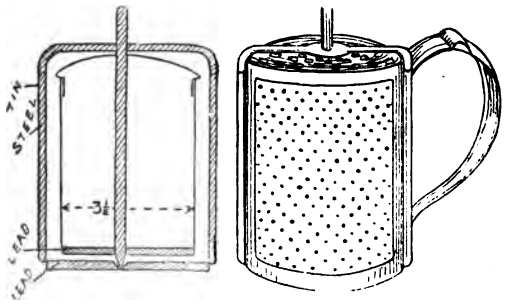
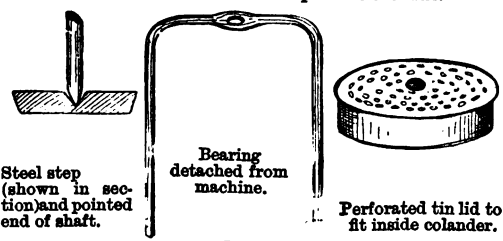


Colander alone. Machine ready for action.



Sectional drawing. Machine complete—showing open side of frame.



Steel step (shown in section) and pointed end of shaft.

Bearing detached from machine.

Perforated tin lid to fit inside colander.

FIG. 17.

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rapidly, from any strain that could be caused by imperfect balance. A piece of stout thread or fine twine, waxed for preference, with a knot at either end, to keep it from untwisting, completes the apparatus.

Since the first publication of these pages in the *Fishing Gazette*, the manufacture of this machine has been taken up by Messrs. Holtzapffel, of 64, Charing Cross, London, from whom they may now be purchased. They can be had to order, either in copper or japanned tin, the price in the first named metal being fourteen, and in the latter, nineteen shillings.

The feathers to be dyed are placed in the colander, which is then successively immersed in the soda bath, dye bath, and mordant bath, and washed under the tap when necessary. After the mordant bath and final washing, the lid *is* fitted on the colander, the colander placed in its frame, with the shaft accurately inserted in the step, and, finally, the bearing rod slid into place. The closed-in side, or shield, of the frame should be turned towards the operator, and the handle should then be on his left side, and partially above the lid of the colander. It should be grasped in the second, third, and fourth fingers of the left hand, leaving the thumb and forefinger free for other work.

One end of the string should now be taken firmly in the right hand, and held more lightly a few inches lower down, between the finger and thumb of the left. A quick turn of the right hand round that part of the shaft which protrudes through the bearing now passes the string firmly once around it. The end of the string held in the right hand is then pulled—slowly at first, and rapidly at the finish—the string being allowed to slide through the finger and thumb of the left hand, but a small tension being all the while sus-

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tained. This will put the machine into rapid motion, which can be kept up as long as is desired, in the same manner as it was begun. The greater part of their moisture will be immediately thrown off the feathers, and after a short time they will be completely dried. If convenient, the machine should be placed closely in front of the fire while it is spinning. The rapid rotation will prevent the feathers from being scorched, and they may be thus dried in about three minutes. The tin shield on one side of the frame serves both to reflect the heat back on the feathers, and to prevent the drops of water, which at the first are thrown off profusely, from reaching the operator's clothes. Without a fire feathers may be dried perfectly in about ten minutes. My machine runs for six minutes, and at a high speed for about four. When the feathers are dry, the colander should be removed from its frame, and turned upside down in the hands. The operator should then blow round the side, so as to cause the feathers to fall loosely into the perforated lid, whence they can be easily removed to their proper destination. It is no easy matter to remove small feathers from the colander while they are wet, so that in many ways my invention will be found a great saving of time and labour. The common method of drying feathers is to shake them up in a band-box in front of the fire. A single hackle may be quickly dried by stroking its fibres alternately backwards and forwards.

For vessels in which to use the soda, dye, and alum, I generally employ common 2lb. jam pots, partially immersed in a saucepan of boiling water. A few folds of paper should be placed beneath the jam pot, to guard against the possibility of its cracking, by preventing the heat from passing directly to it from the bottom of the saucepan, and steam from collecting beneath it, should its

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bottom not be perfectly flat. The colander of my centrifugal machine is of such dimensions as to fit loosely into the jam pot. For a stirring rod, a piece of stick will do, but I find a large pair of watchmaker's tweezers about as handy a thing as one could use for this purpose. With them a pinch of dye of the correct amount can be easily taken from the bottle and stirred into the bath, and a hackle can at any time be readily removed from the colander to be examined. The simplest way to dissolve any of the substances used in dyeing in their various baths is to place them in the colander, and then to raise and lower it in the water after the manner of churning. A similar plan may be adopted to thoroughly saturate the feathers if any difficulty is found in this matter.

White or grizzled hackles should almost invariably be selected for dyeing, though those of other colours have often been successfully treated. It is a fortunate circumstance that plain white hackles are about the most common of any.

When dyeing peacock herl quills, the whole "eye" part of the feather is treated entire before the herls are scraped. To examine the quills at any time, press the feather, close to its shaft, flat between the finger and thumb, or hold it on a level with the eyes.

Bleaching is, fortunately, not a necessary adjunct to fly dressing, except, perhaps, in the case of peacock herl quills, and straw for the bodies of May Flies. The following is a good bleaching mixture for either of these:

Peroxide of hydrogen ($H_2 O_2$)	10 parts
Liquid ammonia	1 part
Water	10 parts

In bleaching quills, the whole "eye" should be immersed for at least twenty-four hours, and then allowed to dry slowly, when the effect

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of the bleaching will appear. The solution does not keep, so it should be mixed freshly before use. Even the peroxide of hydrogen unmixed with ammonia is apt to lose its bleaching properties—to become plain water, in fact—from too much exposure. The solution of peroxide of hydrogen in ether is said to be much more stable, but I have not any experience of it.

A large glass-stoppered bottle is a convenient vessel in which to use the bleaching fluid. The ammonia fumes have a very potent effect on the eyes and nostrils, so it is well to keep them within bounds.

Sulphurous acid (not sulphuric) is another bleaching fluid especially good for straw, and used by manufacturers both for it and feathers. It is a saturated solution of sulphurous acid gas in water, and obtainable from all chemists. The straw or other material is simply steeped in it till bleached to the degree required. Bright gimp, immersed in the same fluid, may be dulled as much as may be desired, without damage to its floss silk core.

The next recipe on my list is one for a liquid and transparent wax. It is of my own invention, and I believe it to be the simplest in existence. I leave my readers to judge for themselves whether it is not also the best. In the matter of wax every fly dresser appears to be something of a faddist, and, from what I have written, it may be inferred that I do not claim to be an exception. My recipe is as follows:

Melt together in a jam pot, or other vessel, immersed in boiling water (and safeguarded from cracking in the manner I have already described), some of the best and purest white or amber resin with about the same volume of turpentine. *Voilà tout!* The wax is made. It should not be poured into water, or pulled about with the hands, as is

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recommended in other recipes, but should be poured direct into whatever receptacle is chosen for it. In my own experience I have found none so convenient as the collapsible tubes in which oil paints are sold. These may be obtained from Messrs. Windsor and Newton, artists' colourmen, Rathbone Place, London. The price is 1s. 6d. per dozen, postage extra. The advantages of these tubes are, that when closed they are perfectly air-tight, and that even when they are open a very small surface of the liquid is exposed. The tube may be laid open upon the table without fear of spilling, and the amount of wax taken on the tip of the finger may be controlled with the greatest nicety, Immunity from breakage is another advantage which the tubes possess.

The advantages which I claim for the wax are, that it is more transparent than any other at present known, that it is free from the faults of many other waxes—brittleness, hardness, and the like, and that it is quite insoluble in water, and holds well, even when the fly is saturated with paraffin, a test, by the way, which, since the introduction of eyed hooks, few flies are called upon to bear.

To clean the vessel in which the wax has been prepared, the following mixture will be found useful:

Paraffin oil	3 parts
Washing soda	2 parts
Water	5 parts

This should be shaken well round the inside, and rubbed on the rim and outside of the vessel. If this is done before the wax has time to harden, all traces of the latter may be easily removed. The above mixture, which is in reality a liquid soap, is very good for scouring purposes generally. Being perfectly soluble in water, it does not leave the taint of paraffin behind it.

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To cleanse the fingers after waxing the tying silk, a drop of turpentine is as good as anything else. I keep a collapsible tube filled with turpentine in the same box with that containing the wax.

Of recipes for preserving material from moths, the number is as great as the greater number are useless. Taxidermists wash the skins they set up with a weak solution of corrosive sublimate, and Mr. Halford recommends fly dressers to follow the same plan. It is probably the most permanent and efficient preventative known, but great care must be exercised in using it, as the corrosive sublimate (bisulphide of mercury) is a most virulent poison, in whatever way it is introduced into the system. It was formerly used for washing sheep, but this practice, I believe, has been abandoned as too dangerous.

Albo-carbon (naphthaline) is mentioned by the Rev. Theodore Wood as a good preservative. It should be kept in the boxes along with the feathers.

"Benzine Collas," as a destroyer of the moths at whatever stage of life they may be—from the egg to the perfect insect—has the authority of the same eminent entomologist; also that of the late Mr. Frank Buckland. A little should be poured on a pad of cotton wool, the latter placed in the box with the feathers, and the lid closed tightly over it. The operation should be repeated at intervals of a few months.

In several portions of "Curiosities of Natural History," I find Mr. Buckland strongly and unreservedly recommending an herb called "feverfew." He says that moths "will not go near it." At the time he wrote it was sold at Covent Garden, but I cannot say whether it is still to be obtained. Perhaps some London reader will make the experiment. I learn from

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the "Materia Medica" that it is akin to the chamomile, and am therefore trying the virtue of chamomile flowers, but up to the present time I cannot say whether they would be of use or no.

The last recipe with which I shall deal relates to the last process through which a dry-fly goes—that which so markedly increases its powers of staying above water, and which is commonly referred to as the "oil tip." The ordinary process, which was first made public in the *Fishing Gazette* by the late Mr. Andrews, of Guildford, is to soak the fly in paraffin oil, or to brush the wings and hackle with the same. I will not say that I have made any improvement on this process, but from *à priori* considerations, and from a few experiments which I have made, I venture to think that such is possible. Let me first, by way of preface, attempt an explanation of the theory of the "oil tip," which may be new to many readers of this paper.

Imprimis, it is necessary to understand that there is a great difference between the molecular structure of the particles at the surface of a fluid and that of those beneath the surface. The cohesive power of the latter is practically *nil*, whereas that of the former is such as to cause the surface of the liquid to assume all the properties of an elastic skin. This will explain the well-known fact that it is possible to cause a dry and well polished needle to float on water. If the needle be pushed through the skin, it will at once sink to the bottom. Also, if the surface of the needle be rough, the water will creep entirely over it and the supporting skin beneath give way. The needle being thus brought again beneath the surface, will again sink. The case of the dry fly not paraffined, and made of feathers which have lost their natural oil, is similar to this latter. The stretched elastic skin creeps over the feathers, and

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pulls the fly beneath the surface. Oiling the feathers simply prevents the water from spreading itself over them—since the surface of water and oil will not adhere—and so enables the fly to float for a much longer time. Thus, the "oil tip," important as it is in aiding the angler to dry his fly when it is *off* the water, plays an equally important part when the fly is *on* the water.

In physical laboratories paraffin wax is generally used instead of paraffin oil to baffle the clinging properties of water, and it was this fact that first suggested to me the following slight modification of the method in vogue among fly fishers.

Put a few pieces of paraffin wax into a small but wide-mouthed bottle, and add about twice the volume of paraffin oil. Place the bottle in hot water, and shake it now and then till the wax and oil are thoroughly mixed together. Now immerse the flies for a few minutes (under the exhausted receiver of an air pump, should such be available), then take them out, and press them gently between the folds of a cloth to remove the superfluous dressing.

This method, so far as I can judge, seems to produce a more permanent result than does the use of the oil alone, and not to be inferior in any other respect. I fancy it would also be a good way to increase the floating powers of the line.

It may be worthy of mention that where distillery refuse is thrown into water, it has the property of so diminishing the strength of the latter's elastic skin, that it may be found almost impossible to keep the fly afloat—the "oil tip" notwithstanding.

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CHAPTER VI.

ON THE VICE AND TOOLS.

As I have already had occasion to remark, it will be a mistake on the part of the amateur to neglect to avail himself of such mechanical aids as may be within his reach. Of these, the vice is especially useful, indeed, in the more difficult

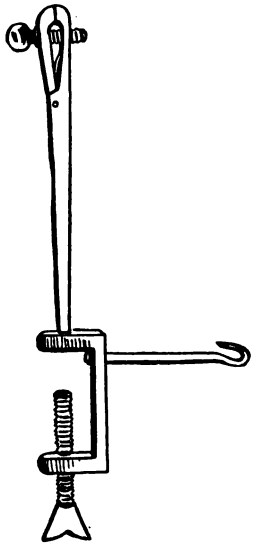

FIG. 18. The Tacklemaker's Vice.

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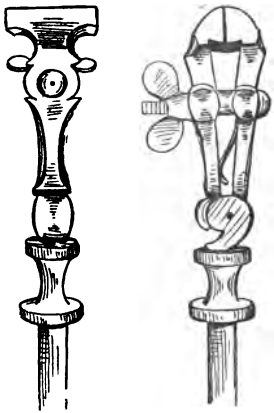
styles of fly dressing, well-nigh indispensable, so that to purchase a suitable vice is one of the first steps that the beginner is recommended to take.

There are three vices offered for his choice. The first is known as the "tacklemaker's vice" (Fig. 18), and is a good serviceable article for all-round work, but the shape of the jaws, though excellent for holding the hook firmly, is not the



Front View. Side View.

FIG. 19. Upper Portion of Mr. Halford's Vice.

best calculated to give freedom to the fingers. The second is Mr. Halford's vice (Figs. 19 and 21) which combines all the best features of the tacklemaker's vice with a few important improvements, the details of which will be readily comprehended from the figures. It is particularly to be noticed that the height of the vice is adjustable, and that attention has been given to the important feature of portability.

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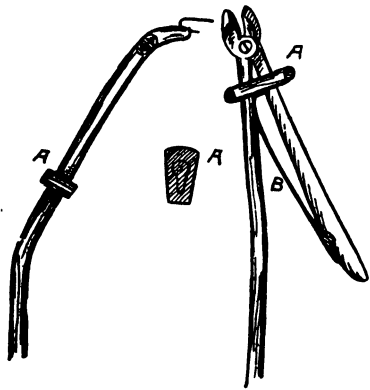
For trout fly work alone, however, Mr. Hawksley's vice (Figs. 20 and 21) will probably be found the most convenient of all. Mr. Halford himself was, I believe, the first to publicly profess this opinion.

As will be seen from the figure, the Hawksley vice is virtually a fixed pair of pliers—which, by the way, remind one unpleasantly of those used by the dentist—with a sliding collar (A) to hold



Front View. Side View.

FIG. 20. Upper Portion of Mr. Hawksley's Vice.

the jaws firmly together. To fix the hook in the vice, place it in position with the right hand, and with the left grasp the pliers and take hold of the hook after the ordinary and improved fashion. The collar will descend automatically by its own weight, and jam at the sticking point. A very strong permanent grip will result if the wire of the hook be fine. When the hook is too big, and the wire consequently too thick, it will be

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obvious to those of a mechanical turn of mind, that the jaws will not be able to close up sufficiently, or make a sufficiently small angle with each other to obtain a good hold. When it is desired to release the hook, the pliers should once more be tightly grasped in the four fingers of the left hand, and the collar pushed upwards with the thumb; the hook, or completed fly, is then removed with the right hand, the grip of the left hand on the pliers being simultaneously slackened. The spring (B) will now keep the jaws of the pliers open and ready to receive another hook. Altogether it is scarcely conceivable that any arrangement for holding a hook firmly and in a convenient position could be quicker and simpler in its action than Mr. Hawksley's. Of course, there would be no difficulty in making a vice of this kind for use in salmon fly dressing, but I have thought it right to explain that one suited for trout fly work might not be well adapted for this and other uses to which the purchaser might wish to apply it.

It is now more than two years since I advocated, in the *Fishing Gazette*, the use of rubber clips to keep the tying silk taut and out of the way at such stages in the dressing of a fly where it is convenient to do so, and my experience of them since then has tended only to strengthen my conviction that they are exceedingly useful. The form of fitting, however, which I originally recommended, though serviceable enough as a home-made article, is now superseded in my estimation by the stronger and more compact form illustrated below, and which Messrs. Holtzappfel, of 64, Charing-cross, the makers of both Mr. Halford's and Mr. Hawksley's fly dressing vices, are prepared to fit at a small cost to any pattern of vice, old or new. (Fig. 21).

As will be seen, the fitting is adjustable, and occupies such a position as never to be in the

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way, but to be readily reached when it is to be brought into service. The silk should first be pulled down taut, so as to press against the metal slide, and then pulled steadily to the right. The

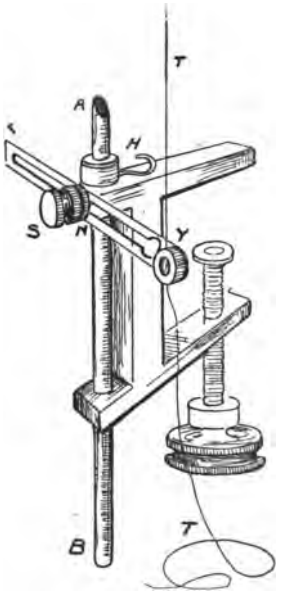

FIG. 21. Clamp of Halford or Hawksley Vice, with Athenian rubber clip fitting, lower portion of vice pillar and hook for use in looping, &c. A B—Lower portion of vice pillar. X Y—Metal slide of rubber clip fitting. S—Screw to secure vice pillar. N—Nut to secure metal slide. Y—Rubber clip. T T—Tying silk. H—Hook turning freely around pillar of vice.

The position of the metal slide may be readily changed from the horizontal to the vertical, and clamp and slide thus rendered conveniently portable without being detached.

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latter action will force it beneath the rubber clip, when it will be held firmly between the rubber and the metal.

The tools necessary in fly dressing are few and simple. A small pair of scissors and a pair of watchmaker's tweezers (both with sharp points), a dubbing needle, and a pair of hackle pliers are all that will be required.

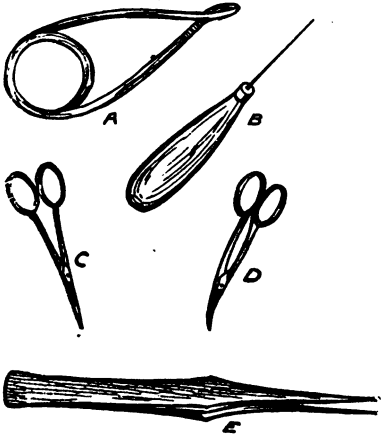

FIG. 22. The Fly Dresser's Tools. A—Hackle pliers. B—Dubbing needle. C—Straight-bladed scissors. D—Curved-bladed scissors. E—Watchmaker's tweezers.

The scissors may either be of the ordinary straight bladed pattern, or they may have blades curved, so as to be capable of cutting in a curved line. The latter kind is especially used for trimming May Fly wings into shape, and is perhaps to be preferred for all the ordinary purposes of fly dressing.

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The watchmaker's tweezers will be found extremely useful for picking hooks out of the box in which they are kept, for splitting the wings of a floating fly, and for a variety of other purposes. Their usefulness in dyeing has already been mentioned.

The dubbing needle is simply an ordinary sewing needle stuck eye foremost into a suitable handle. The latter may be bought at any hardware shop, and the needle fixed by means of a pair of pliers.

The hackle pliers are illustrated in Fig. 22. They are generally made of brass or steel wire, and are constructed on a principle contrary to that of ordinary pliers; for in order to open their jaws their sides are compressed, and when the point of the hackle is admitted the pressure is removed. The jaws then automatically close and take a very firm grip of the hackle, so that, in effect, the hackle and hackle pliers become temporarily united. Thus a small hackle may be wound as easily as a large one.

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CHAPTER VII.

HOW TO DRESS A WET FLY.

At the outset of the present chapter it may be pardonable to reiterate the truism, that it is impossible to dress a fly true to nature without either a present model from which to work, or an accurate recollection of an absent one. The former alternative is, of course, the better; and before the latter can be employed the fly must have been studied, both as a whole and as a structure of parts—studied, in fact, with a view to imitation.

In "The Story of Ung" a short ballad by Mr. Rudyard Kipling, an old "maker of pictures," sings of the aurochs that:—

> "Men have not time at the houghing to count his curls aright."

And it is likely that, due to a similar cause, there may be much unsuspected "haziness" among fly fishers, as to what a natural fly is really like.

The fly dresser is, then, advised to avail himself of every opportunity of studying the form and colouring of flies, and to have always living models when they are obtainable. Meanwhile, the figures below may suffice to give a rough, general idea of some of the principal forms of insect life with which we shall have to deal.

In the following descriptions of the various methods of trout fly manufacture, I shall assume that the beginner (to whom I address myself) is right-handed. If the case be otherwise, it will not

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be difficult to make the necessary modifications in my directions.

The vice should be screwed to the bench or table in such a position as to receive plenty of light. If possible, table and vice should be so arranged that strong light, as from a window, should come from behind the operator; while plenty of diffused light—*i.e.*, that coming from

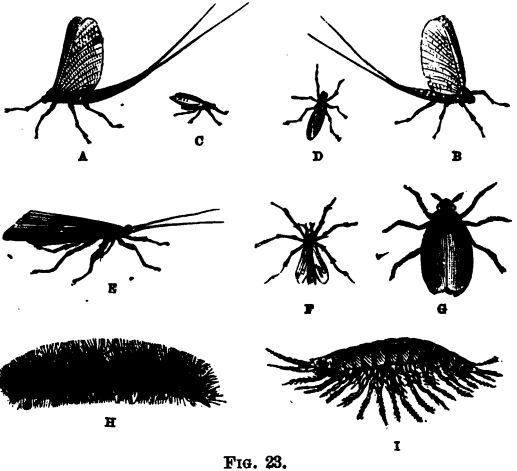

FIG. 23.

white or light coloured objects—should fall on his work in other directions. If a white carpenter's apron be worn, it will be found a great convenience in many ways, and will be of assistance in the matter at present under consideration.

I suppose that most persons understand the difference between what is known as "right-handed" and what as "left-handed" winding;

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also what is meant by winding "towards the right," and what by winding "towards the left." As, however, these terms are likely to be of great use to us in the near future, I have thought it well to explain them by means of the illustrations below.

Let us now begin the dressing of our wet fly, which some may think has been too long deferred.

Method No. 1.

Our first exercise will be to dress an upwing dun or spinner. Fix the hook (No. 2 will be a

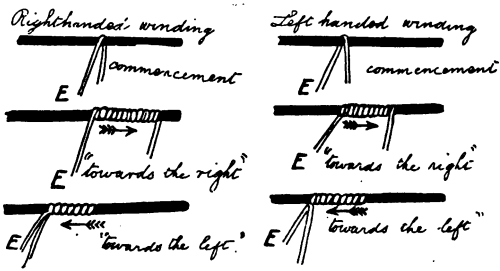

Fig. 24.

The shorter end of the tying silk is marked *E*. The arrows indicate the directions in which the winding progresses.

good size to commence with) in the vice, in the position shown in Fig. 25, and, if such a further aid to the eyesight be felt desirable, lay a piece of white paper on the table, so that the hook may be outlined against it.

Wax a length of about 10in. of tying silk by taking a little liquid wax on the tip of the forefinger and drawing the silk slowly several times between forefinger and thumb. Cleanse the finger and thumb with turpentine and wipe them on a

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cloth, which should be kept for the purpose, or on the apron referred to above.

Now, commencing from a point about ⅛in. from the end of the shank, wind right-handed,* about six turns towards the left, then back over the same six turns towards the right. Fasten silk in clip, and cut away end (E).

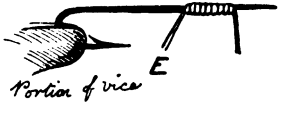

FIG. 25.

If dressing flies to gut, take a length of the latter, being careful that it is perfectly round and otherwise of good quality, and flatten one end between the teeth, so that the length of the flattened end may be about one-half that of the shank of the hook.

Lay the flattened end horizontally beneath the

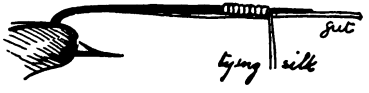

FIG. 26.

shank (Fig. 26). Remove silk from clip, and wind towards the left, till the straight part of the shank is entirely covered (Fig. 27). Fasten silk in clip.

Take the two fibres to imitate the whisks of the fly between the finger and thumb of the right

* I say right-handed only to fix the ideas. Of course, the left-handed method of winding may be adopted if it be preferred.

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hand, the tips of the fibres pointing in the same direction as the forefinger. Lay them with the roots touching the left-hand portion of the upper side of the shank, and the points projecting to the left (Fig. 27).

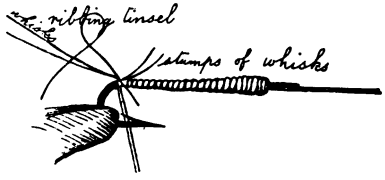

FIG. 27.
Whisks tied in, and ribbing tinsel about to be tied in.

Carefully adjust the length of the part to be allowed to project, according as the fly to be imitated is a Dun or a Spinner (*Vide* Fig. 23, A. and B., also note, page 79). Now press the shank

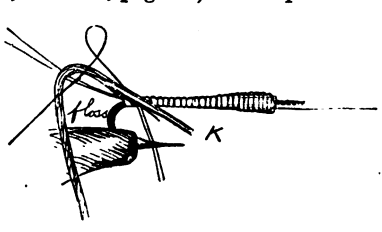

FIG. 28.
Whisks and ribbing tinsel tied in, and floss about to be tied in.

of the hook, together with the fibres, placed in position as above, between the forefinger and thumb of the left hand. Remove the silk from clip with right hand, and take two more turns towards the left,

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bringing the silk up and down between the tips of the left thumb and forefinger. Now remove the left hand from the hook, and take another turn of the silk towards the left, this time bringing it not over, but behind the fibres (Fig. 27). Then fasten silk in clip, and trim root ends of fibres.

Next tie in the ribbing tinsel (if any) by another turn towards the right, and then (Fig. 28) the floss, or other body material, by a few more turns in the same direction. During these operations the tinsel, or body material, if soft, should be held close to the shank of the hook, between the

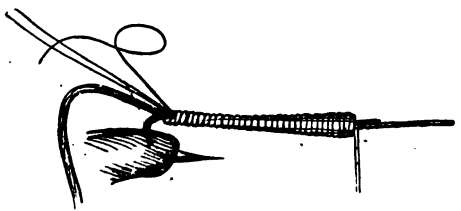

Fig. 29.

left forefinger and thumb, just as were the whisks at the preceding stage of our present piece of work.

Fasten silk in clip, and cut away slantwise the exposed end (K) of the body material. Then continue winding towards the right, till the original starting point is reached. Fasten silk in clip.

Now, with the right hand, wind the strip of body material over the foundation of tying silk, changing for the moment to the left hand, to pass the strip between the pillar of the vice and the length of tying silk, held taut by the rubber clip.

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During the winding, the second, third, and fourth fingers of the left hand should hold the vice lightly, a few inches beneath the jaws, so as to allow the left finger and thumb to rest a little below the shank of the hook, one on either side

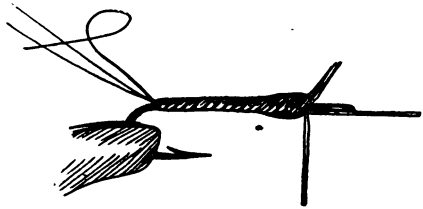

Fig. 30.

of the vice, in readiness to receive the body material from the right hand once in every turn.

When the tying silk is covered, hold the body material above the shank with the right hand (Fig. 30), and with the left remove silk from clip,

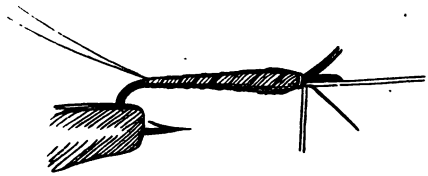

Fig. 31.

and take a turn over the body material and towards the right. Change tying silk into right hand, and take another turn towards the right and over the body material. Fasten the silk in clip, and cut away hanging strip of body material.

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Wind ribbing tinsel carefully in open spiral turns, fasten with tying silk and cut away end, by same procedure as was used in fastening and cutting away end of body material. Fasten silk in clip.

Now select a wing or tail feather from which

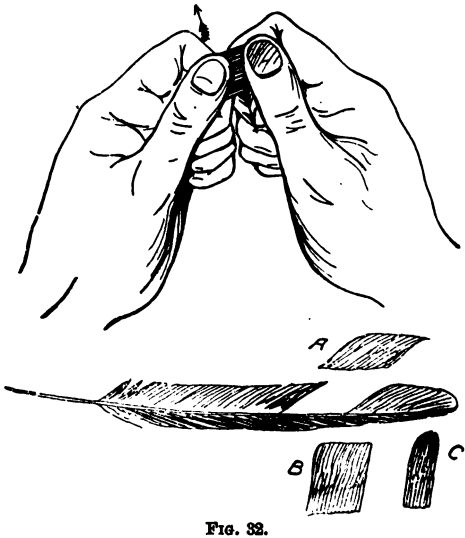

FIG. 32.

to prepare wings. Cut away a piece of the feather web, about three-eighths of an inch broad, i.e., of twice the breadth of which the wings are to be. Hold the severed web in both hands in the position shown (Fig. 32), and move either hand very slightly in the direction indicated by the arrow placed next it. The pressure of the

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fingers on the web should be very light during the movement, and at the end of the movement one hand should be removed. Then take hold again with this hand and repeat the process, this time removing the other hand. Continue in like fashion, occasionally pausing to stroke the fibres out straight, until from the form A (Fig. 32) the web assumes the form B.

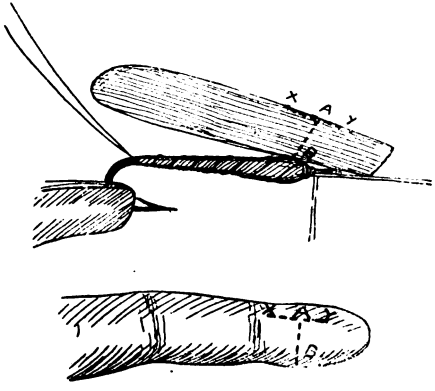

FIG. 33. The lower half of the figure illustrates the position of the lines A B and X Y on the left forefinger. It will be understood that the portion of the forefinger is not shown in its proper position nor, of course, in its proper relative size.

The fibres should be carefully stroked together, where they threaten to separate.

Now double the web as shown in the figure, leaving the light or dark side outermost, according to choice.

The wings are now ready to be tied in. They should be taken by the roots between the finger

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and thumb of the right hand, and laid on edge along the upper side of the shank of hook, so that their length may be correctly apportioned.

Then place the tips of the left finger and thumb on either side of the hook-shank and wings, so as to hold the latter in position.

Remove silk from clip with the right hand. Then, opening the left thumb and forefinger a little at the tips, by concentrating the pressure on the line A B (Fig. 33), pass the silk up between the tip of the thumb and near wing, and hold it taut for a moment perpendicularly above the

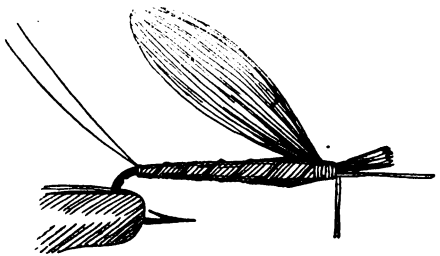

FIG. 34.

shank. Now concentrate the pressure of the left thumb and forefinger on the line X Y (Fig. 33), and pass the tying silk down between the off wing and the tip of the left forefinger. Now, pressing, with the left thumb and forefinger, on both tying silk and wings, draw down the tying silk slowly and firmly with the right hand, thus contracting the stumps of the wings, and binding them on the upper surface of the shank. Pass the silk two or three more times around the stumps of the wings, to secure the latter more completely, before removing the pressure of the left forefinger and thumb. Fasten silk in clip

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and trim away the exposed stumps of the wings with the scissors.

When dressing flies to gut or on down-eyed hooks, this is quite an easy matter, but when dressing on up-eyed hooks, it is more difficult. In this latter case the simplest plan within my experience is as follows: Hold the scissors on the right forefinger and thumb, but with the blades pointing inwards towards the elbow. Now set the points astride the stumps of the wings and

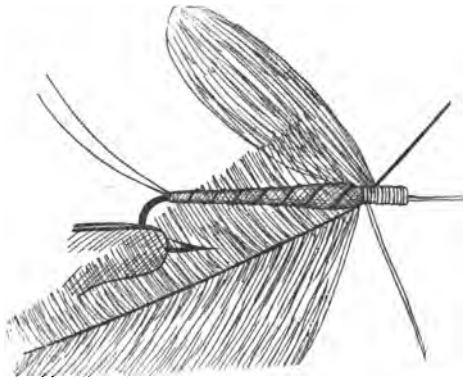

FIG. 35.

upper side of the shank, and, holding the wings between the left forefinger and thumb, draw the scissors upwards, at the same time compressing them, so as to cut away as much of the stumps as possible. Repeat the operation as often as may be necessary.

Remove silk from clip, and continue winding towards the right, till the end of the shank is completely covered.

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Then wind back towards the left, as far as the roots of the wings. Change the silk into the left hand, and taking the tips of the wings between the right forefinger and thumb, raise them up

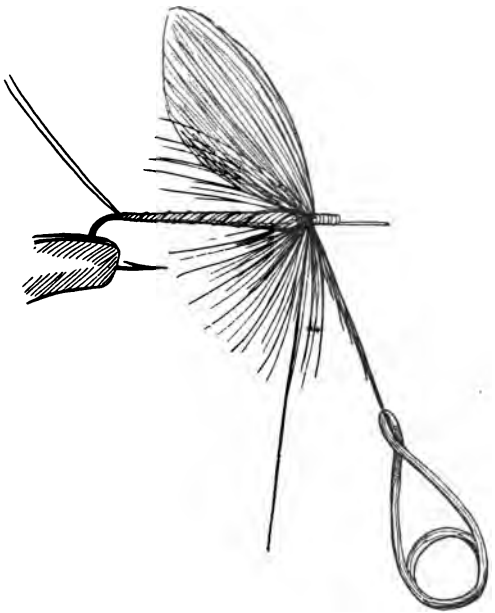

Fig. 36.

from the shank of the hook and pass the silk behind them. Fasten silk in clip.

Now prepare a hackle of suitable length of fibre, by stripping off the down on either side of the root end of the quill.

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Then, holding the hackle by the tip, lay the bare stem obliquely across the under side of the shank, pointing "half-right," and the inner or less glossy side of the fibres facing inwards towards the shank.

Fasten in hackle, *i.e.*, bind stem to shank, with two turns of the tying silk towards the left. Fasten tying silk in clip, and cut away exposed end of hackle stem. Fasten hackle pliers on point of hackle.

Now wind hackle two or three turns towards the right, changing hands, as in winding body material, and keeping the stem of the hackle taut during the operation. Bring the turns alternately behind and in front of the strained length of tying silk, always, however, pulling the point of the hackle a little to the right when it is passing underneath the shank. Now, holding the unwound part of hackle taut, and pointing "half-right," fasten down the wound part with two turns of the tying silk, towards the right and in front of the wings. Fasten silk in clip. Cut away closely the unwound remnant of the hackle. Remove silk from clip.

The next step is to fasten in the tying silk by means of what is called the "whip finish."

All kinds of lapping, whether on rods, cricket bats, or any other such articles, are finished by this neat and secure fastening. The manner of making it is a little difficult to describe in words, but perhaps it will be understood from the figures below. These are intended simply to illustrate the whip finish, and have no other relation to the figures which have preceded them. Thus a portion of the shank of the hook is shown bare, though, in the method of fly dressing with which we are now dealing, the whole shank is covered with tying silk, before the time for making the whip finish is reached.

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To make the whip finish :—

Raise a part of the silk above the shank, as in Fig. 37, and fix the end in the rubber clip.

Form the loop as in Fig. 38.

Pull the gut through this loop, and wind with the part of the silk marked A B C, one turn

Fig. 37.

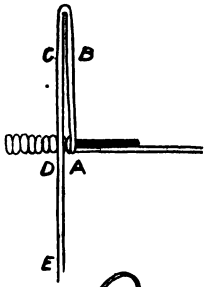
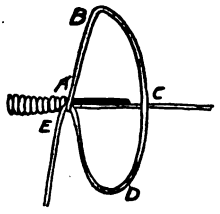


Fig. 38.



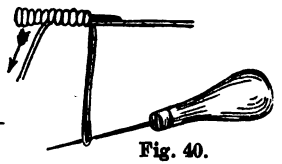


Fig. 40.

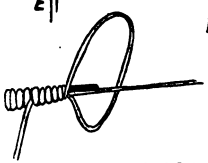


Fig. 39.

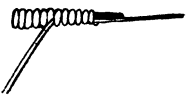


Fig. 41.

towards the right. Repeat this operation a few times. The work will now appear as in Fig. 39.

Insert the point of the dubbing needle in the loop, and hold it taut, as in Fig. 40.

Remove from clip and pull silk home, as in

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Fig. 41, and finally cut away as closely as possible the loose end of the tying silk. In fly dressing, four turns of the tying silk are sufficient to form the whip finish. When the fly is dressed to gut, the last turn of the whip finish should not reach the end of the shank. It will then be almost impossible for it to come undone, and, when the head of the fly is varnished, the abrupt ending of the outermost layer of silk lapping will not be noticeable.

Our fly is now complete, save for the varnishing of the head and the final adjustment of the fibres of the hackle and wings. Coachbuilders' copal varnish is the best kind to use, but it requires at least twenty-four hours to harden properly. Shellac varnish, made by dissolving orange shellac in rectified spirits of wine, dries almost instantaneously, and is excellent when the fly is wanted for immediate use. A tiny sable hair brush is perhaps the best thing with which to apply the varnish, but the dubbing needle or a wooden match pointed at the end will do very well as a makeshift.

In giving the fly its finishing touches, whether at the worktable or at the riverside, many amateurs are inclined to forget that it is intended to be a copy of a natural insect, rather than of a shop-made artificial. They should not endeavour to bring the hackle fibres into a compact bunch, in the same plane with the hook, but should rather spread them out, pointing fore and aft and on either side, as do the legs of the natural fly.

NOTE.—I append sketches of a dun (the last state but one of the upwing fly familiar to us all) and of a spinner (the complete and reproductive state of the same fly). The two sketches (A and B, Fig. 23) appearing on page 66 are unsatisfactory, as they do not illustrate the chief distinctive features, nor the correct proportions of duns and spinners.

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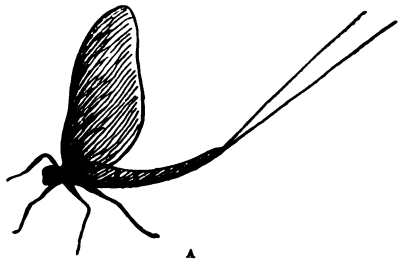
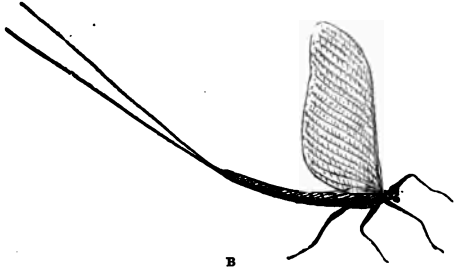
The wings of a dun are more or less opaque, and are, for the most part, well imitated by the feathers usually employed. The wings of a spinner, on the contrary,



A

are, as a rule, like films of crystal, either *smooth* or *frosted* (as it were), to give an effect which might perhaps be described as "scaly sheeniness."



B

To the best of my judgment, the proportions important to fly dressers of these upwings appear somewhat as follows:

Of both dun and spinner, the length of the wings from base to tip is equal to the total length of head, thorax, and abdomen (body).

Of a dun, the length of the whisks is to the total length of head, thorax, and abdomen, as 7 to 6, approximately.

In a spinner this same ratio is, approximately, as 7 to 4.

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CHAPTER VIII.

HOW TO DRESS A WET FLY.

Method No. 2.

The following method of dressing a wet fly is that commonly used by professionals. Male hands, as a rule, dispense with the vice, holding the hook at the bend tightly between the left forefinger and thumb; but whether a vice be

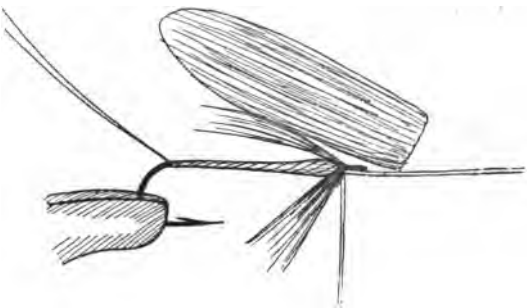

Fig. 42.

used or no, the method, in its essential details, is always the same.

I trust that I may safely use, from now on, a shorter and more technical style of description.

Commence as before, and continue till body is formed and secured. Tie in hackle as before by two turns towards the left, and clip away bare

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stem. Wind two or three turns of hackle, the first in front of silk, the second behind, and the third (if there be any) in front. Fasten off hackle by two turns of silk towards the right. Clip away unwound tip. With dubbing needle

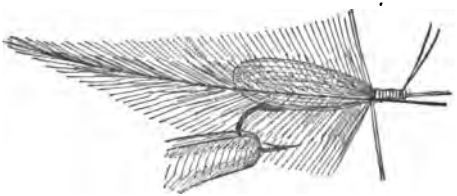

Fig. 43.

adjust hackle fibres, coaxing some of those which stand out above shank of hook to lie on either side. Press the fibres back. Prepare and tie in wings, and finish as before.

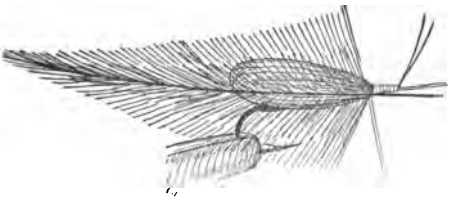

Fig. 44.

This same method is used in dressing down-wing flies, the hackle fibres left on the upper side of the shank after treatment with the dubbing needle should, in this case, be clipped away. The following methed, however, is to be preferred.

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How to dress a Downwing.

Commence as before, but a little nearer the bend of hook, and, of course, omit whisks. Form body as before. Prepare and tie in wings. Clip

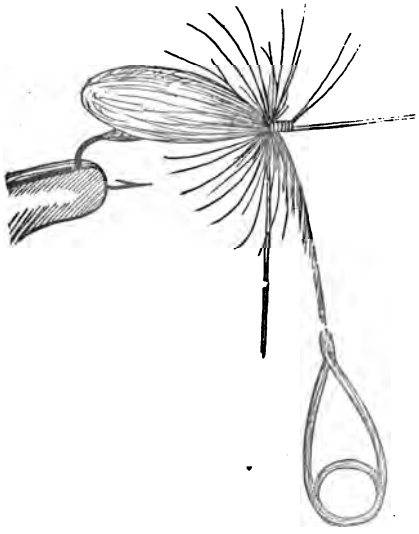

Fig. 45.

stumps and continue winding to end of shank, tying in feelers at head, as whisks were tied in, in preceding example. Wind back again to roots of wings as before. Split the two wings apart with the watchmaker's tweezers, and, taking the tip of either wing separately between the left forefinger

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and thumb, draw it down a little on its own side of the shank. Now place the hackle in the position indicated in Fig. 43, and holding both wings, hackle, and the shank of the hook between left forefinger and thumb, fasten the wings in a

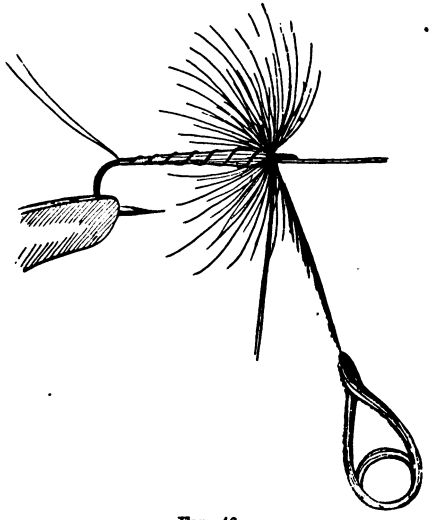

FIG. 46.

lie-down position, and tie in hackle by means of two turns of the tying silk towards the left.

Wind hackle and finish as before.

HOW TO MAKE A BUZZ-FLY.

Commence as in method No. 2, but leave less of the end of the shank bare. Continue as in method No. 2 till hackle is wound and secured.

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Clip unused tip of hackle, and wind silk towards the right to end of shank. Wind back towards the left till hackle is reached, and then form whip finish as before.

How to Dress a Palmer.

The term palmer, as Ronalds tells us, applies primarily to the caterpillars of certain moths, notably to that of the Arctia caja, or garden tiger moth. They are well known in most districts under the name of woolly bears, and are frequently

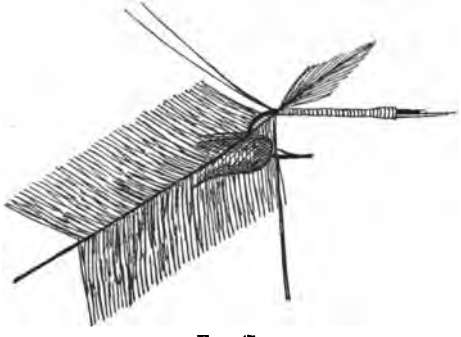

Fig. 47.

to be seen crawling on the footpath. They are said to make long wanderings, and hence their name, palmer being the term originally applied to pilgrims returned from the Holy Land in the days of the crusades. In fly dressing, however, the term palmer is used in a general way, to denote wingless artificials, hackled all down, or half-way down, the body. Mr. Francis Francis shows, I think, convincingly enough, that the natural palmer cannot be regarded as having a place among the staple foods of the trout, and that the

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artificial imitation must therefore be relegated to the list of fancy patterns.

Ronalds and Foster seem to be of quite a different opinion, but we need not enter on the controversy here. The important fact for us is, that both the large woolly bears and the small palmers are often very killing lures.

The following is a good method of dressing a palmer: Lay on the silk and tie in gut as usual. Select a hackle, long in the quill and relatively

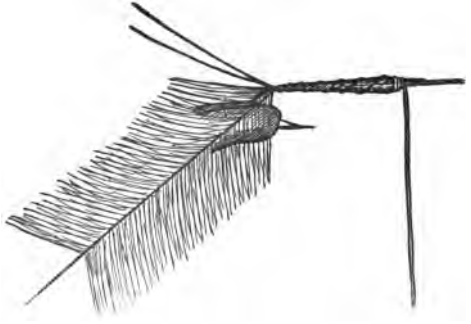

FIG. 48.

short in the fibre. Stroke back all its fibres except those at the point. Tie it in by the point, before tying in body material.

Tie in ribbing tinsel, if any, and body material. Wind tying silk to shoulder. Wind and fasten body material and ribbing tinsel.

Wind hackle, keeping it well on edge, in open spiral coils, close behind, and touching ribbing tinsel. Fasten down hackle with two turns of tying silk. Cut away stem of hackle.

If desired, another hackle may now be tied in,

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and the fly finished as a buzz-fly, or both hackle and wings may be added as in No. 2, thus making

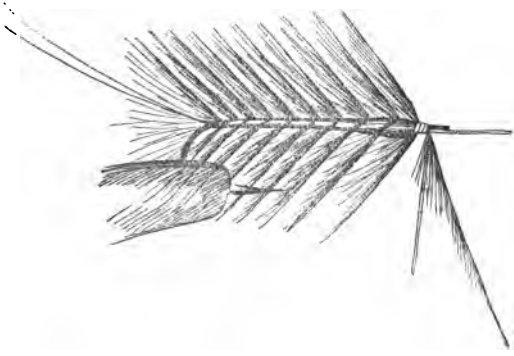

FIG. 49.

the fly what we may term a winged palmer. The third alternative, is, of course, to form the head and finish "right away."

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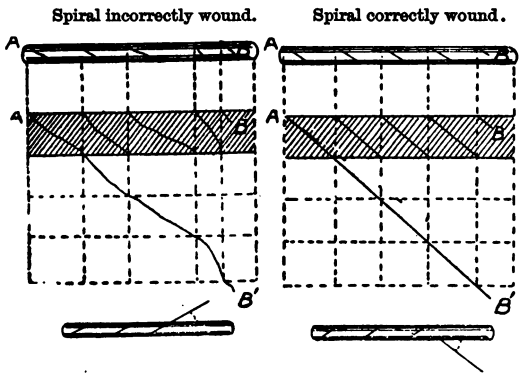
CHAPTER IX.

HOW TO DRESS A WET FLY—(*continued*).

It may here be well to consider the proper method of winding a spiral, since there seems to be a prevalent idea, even among authors on fly dressing, that it is impossible to wind the hackle



Method of winding—observe the angles.

Fig. 50.

of a palmer in such a manner that it is not afterwards liable to slip, when fastened only at either end.

To wind a non-slipping spiral (of thread, say) round a cylindrical surface (say that of a pencil),

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the thread *must always, during the winding, be strained at the same angle to the direction in which the pencil points.* For suppose the pencil to be covered exactly with a rectangular strip of paper, and suppose the thread to leave a mark on the paper; then, when a spiral has been wound and unwound, suppose the paper to be removed and flattened out. It will appear as illustrated by the shaded portion of the figure (Fig. 50). A marks extremity of the spiral and B the other.

Now, from the dotted portion of the figure it is easily seen that the length of any spiral reaching from A to B must be equal to the length of some line reaching from A to B′, B′ being perfectly determinate from the position of B and the number of turns in the spiral. But the shortest of all lines reaching from A to B′ is the straight line AB′. Therefore the shortest spiral reaching from A to B is that wound in accordance with the above-mentioned conditions.

If, now, the ends of this *shortest* spiral be bound fast to the pencil, it is clear that, unless the thread forming the spiral stretches, it is quite impossible for any part of it to slip.

We see, then, that to dress a palmer properly it is necessary, both to wind the hackle as has been directed, and to fasten it with the tying silk *as soon as it has been wound as far as the shoulder.* The *wrong* method is, after having wound the hackle in open turns up the body, to proceed at once to wind it in a few close turns at the shoulder, without previously making it fast. I trust that I have made this point very clear, for it involves an important principle which is often disregarded.

When there is any considerable degree of taper in the body, the considerations by which we determine the shortest spiral must undergo some modification.

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It will be clear from reasoning, analogous to the above, that in this case the hackle or ribbing tinsel should be held at a slightly smaller angle to the shank as the winding proceeds. Thus the turns of the spiral will, for two reasons,* be more

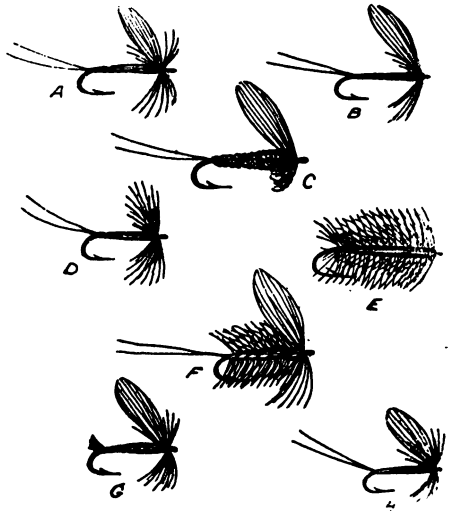

FIG 51. Types of wet flies. A—Upwing dressed by method No. 1. B—Upwing dressed by method No. 2. C—Fly with thickly dubbed body and dubbing for legs. D—Buzz fly. E—Palmer. F—Winged palmer. G—Fly with tassel-like tag. H—Fly with tinsel tag.

widely spaced near the shoulder than near the tail. If the hackle be held taut during the

* The first reason being that, even if the angle were not gradually lessened, the thickening of the body would occasion a corresponding and proportionate widening of the spaces between the successive coils.

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winding, it will, of course, have a tendency to take up its proper position automatically.

Another Method of Dressing a Winged Palmer.

Commence as before, tying in hackle, ribbing tinsel (if any), and body material in succession. Wind tying silk, body material, and ribbing tinsel to shoulder, fastening in the two last as before. Tie in wings as in method No. 1. Wind body hackle and finish as before.

Tags.

Two kinds of tags are illustrated in Fig. 51.

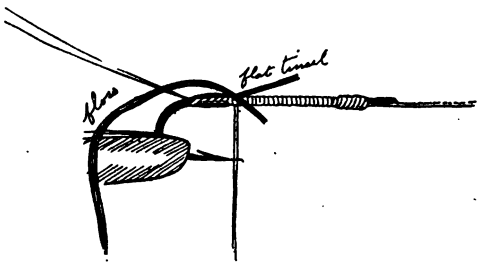

Fig. 52.

The one (G), a short tassel-like appendage, is formed by a piece of floss silk or a bunch of feather fibres, tied in at the end of the body, as whisks are, and afterwards trimmed squarely across at the proper length. The other type (H) may be described as a short joint or section at the tail end of the body, and of a colour different from that of the remainder of the body. Let us now suppose that it is desired to make a tag of tinsel in front of the whisks.

Commence as usual, and having reached the

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stage illustrated in Fig. 27, tie in a length of fine flat tinsel. Wind the tying silk some four or five turns towards the right, and fasten in clip. Wind tinsel over these four or five turns, and fasten by one turn of the tying silk. Before cutting away unwound tinsel, tie in body material with two more turns of tying silk towards the right, which should be made over the end of the tinsel, so as to further secure it. Cut away tinsel and end of body material, and proceed as before.

It is obvious that when a fly has whisks, a tag may be formed either before or behind the whisks. It is clear, also, that by a device similar to that just described, may be made a winged palmer, hackled only halfway down the body. The hinder half of the body may be made as a tag of one strip of material, and after this is wound and secured by one turn, the hackle, ribbing tinsel, and another strip of body material may be tied in, and the fly completed as before. Particoloured bodies of any number of joints may be made on the same lines. The following application of the same method may also be noticed.

When a particularly large Palmer, or woolly bear, is to be made, it may sometimes happen that a hackle sufficiently long to cover the whole length of the body cannot be obtained. In this case, the simplest plan is to make the body in two sections, finishing off one before tying in hackle and body material with which to form the other. If the work be done neatly, the join will not be easily visible.

How to Make a Dubbed Body.

Commence as usual, and having tied in the ribbing tinsel (if any), hold the tying silk taut with the left hand, and taking a little dubbing of the proper shade between the finger and thumb of the right, spin it smoothly on the well waxed

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tying silk close up to the shank of the hook. Twist the tying silk a few times in the same way, "right handed" or "left handed," as that in which the dubbing was spun. Wind the tying silk, now covered with dubbing, towards the right as far as the shoulder. Remove the unwound

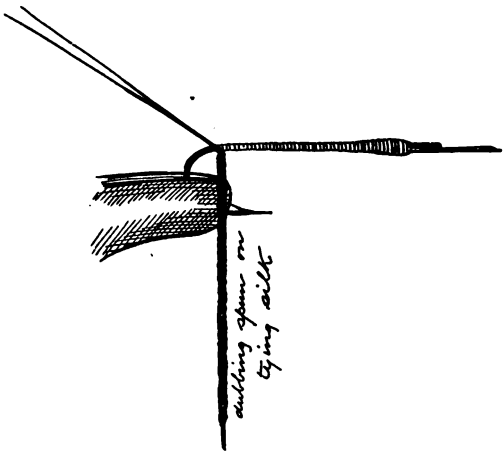

FIG. 53.

dubbing from the tying silk with the nails of the right forefinger and thumb.

In dressing some flies, the dubbing that has been wound on the body should now be picked out with the dubbing needle, so as to soften the outline of the body and give it a more woolly effect.

Wind the ribbing tinsel, and fasten it off as usual. Tie in wings as usual, and add hackle;

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or, having brought the tying silk behind the wings, spin a little more dubbing on it, and wind a turn or two of this behind the wings. Finish as usual, and when dubbing is to serve for hackle, pick it out carefully at the shoulder.

Of course, the hackle or "shoulder dubbing" may be put on before the tying in of the wings according to method No. 2, if it be so preferred.

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CHAPTER X.

HOW TO DRESS A DRY FLY.

DRY-FLY fishing being a development of wet-fly fishing, it follows almost of necessity, that the artificial lures used in the newer style should be developments of those used in the older; and fact confirms the inference.

It is in the hackle and wings of the dry fly that the results of the developing process are chiefly noticeable. The special object served by the seemingly excessive number of fibres in the hackle is, firstly, to afford greater support when the fly is in contact with the surface of the water; and, secondly, to afford greater resistance to descent, and thus decrease the impetus with which the fly strikes the water. The split wings, acting like a parachute, also contribute to produce the same result.

Now, it is well known that in almost every case of practical importance, a body which does not sink to the bottom of a fluid displaces a quantity of the fluid equal in weight to itself. But, strange as it may seem, the Archimedean rule, almost universal in its application, is of but minor importance to the dry-fly angler. A simple experiment will decide the matter.

Place a dry fly carefully on the surface of the water, and in an upright or "cocked" position. Its "displacement" is very small indeed, little more than the bend of the hook being under water. Then sink the fly, pressing it well under the surface. On the pressure being removed, it

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will (if a typical dry fly) rise rapidly, till the tips of its wings touch the surface, when it will remain still, entirely immersed—held down by the elastic skin of the water, to which reference has already been made. Before, when the fly was floating properly, it was the elastic skin that held it *up*.

It is true, indeed, that this elastic skin of the water is capable of sustaining such a small weight, that, in all ordinary questions of buoyancy, its presence may be altogether ignored, but its influence in dry-fly fishing is supreme.

A good dry fly, then, should be constructed :—

1. To fall in the correct position.

2. To fall so gently on the skin of the water as not to break through it.

3. To distribute its weight so evenly on the skin as to be easily borne up.

4. To prevent the skin from "creeping" over it.

In Chapter V. the last condition has already been discussed. We shall now examine some forms of dry flies, and discover how far they fulfil the remaining conditions.

Forms A, B, and C (Fig. 54) are those most commonly used, but all have a tendency to fall with the shank of the hook pointing skywards, unless there is just sufficient tension at the end of the gut cast to keep it horizontal. When this is the case, the line of descent being vertical, it follows that the wings should be perpendicular to the shank (as in Form B), if the maximum advantage is to be taken of their parachutic action. Now, while Form A is the truest to nature, Form C is the most evenly balanced when floating in its correct position, and therefore conforms best to the third condition above laid down, so that, on the whole, it would seem that Form B, being a compromise between the two, and having, as has just been demonstrated, a special advantage of its own, is

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the best of the three, that have, so far, been considered.

Forms D and E, however, seem, when judged by the standards proposed, to be far nearer to mechanical perfection than any of the others. In Form E, for instance, a form of my own invention, for the first time publicly described in the

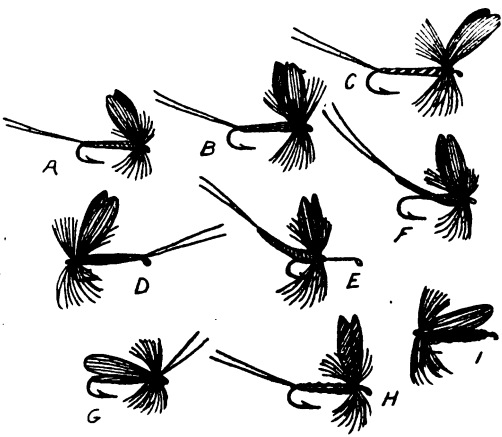

FIG. 54. Types of dry flies. A, B, C—Ordinary upwings D—Reversed winged upwing. E, F—Detached bodied flies. G—Ordinary downwing. H—Fly with "rolled" wings. I—Reverse winged downwing.

Fishing Gazette in 1897, it will be noticed that the centre of gravity is just beneath the wings. This means that the natural tendency of the fly is to fall upright on the surface of the water, and with the minimum of speed. Besides this, the hackle, being the first part of the fly to touch the water, serves to break the force of the fall. When the

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fly is floating, it is supported both by the shank of the hook and the detached body, so that it is the hardest to sink (as well as the easiest to "cock") of all the types illustrated. It also, I think, compares favourably with Form F as regards the consideration of the hook being hidden, especially when it is remembered that any part of the hook that is under water must be seen by the fish much more distinctly than the part above the surface; and, more than this, that the part beneath the water will often be seen double owing to reflection.

Form D has its centre of gravity almost beneath its wings, and, therefore, possesses advantages similar to those of Form E, which it even excels in effective concealment of the hook. With Pattern C, however, it shares this disadvantage, that, when it is in use, the wear and tear on the wings is somewhat excessive, owing to the slope of these towards the point of the rod.

With regard to the "set" of the hackle of a dry fly, the advantage of having the fibres as well spread out as possible is more than ever apparent. Indeed, to stroke and pull them out into a compact bunch, is not merely to go out of one's way to avoid a resemblance to nature, but it is to act almost as foolishly as would a furniture maker, who would place the four legs of a table in a straight line; for some of the hackle fibres of a dry fly should help to support it on the skin of the water, much as the legs of a table support the table. It is one of the advantages of cocks' hackles for dry-fly dressing over the softer hackles of the hen, that the fibres of the former do not get drawn together as easily as do those of the latter.

Having now attempted to explain the general principles upon which a dry fly should be constructed, and discussed the advantages of the

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various external forms of the finished article, I may proceed, without further delay, to the description of the various methods of its manufacture.

Dry Fly.—Method No. 1.

Commence at shoulder and wind towards the left to bend. Tie in whisks and form body as in wet-fly methods.

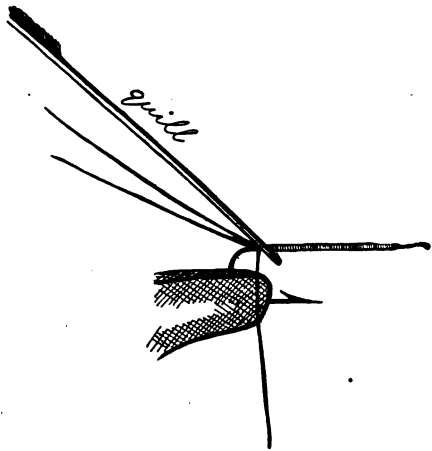

Fig. 55.

Now prepare two pieces of feather web of the Form B, illustrated in Fig. 32, and of the same size. Place these on the table, dark side uppermost. Slightly moisten the tip of the right forefinger and press it gently on one of the feather webs so as to cause it to adhere. Raise it from the table and lay it, light side to dark side, exactly

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over the other. Moisten the forefinger again and press it on the two thicknesses of feather, so as to cause both to adhere to the finger in their proper positions. Then, using both hands, fold the double thicknesses of feather in half, leaving the dark side facing outwards. The four thicknesses of feather thus obtained are to be the double wings of our dry fly. I shall refer to the process

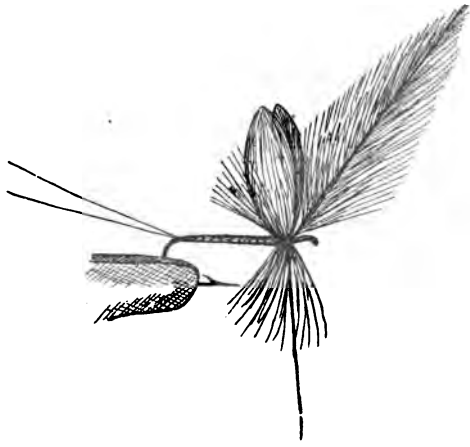

Fig. 56. Hackle being brought between the wings.

just described as the first method of winging, or preparing the wings (*vide* Fig. 57). Single wings are in durability and general utility much inferior to double ones. They are prepared, as is obvious, by doubling one thickness of feather dark side outwards.

Tie in wings. Clip stumps, and continue winding towards the right to end of shank.

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Wind back towards the left, and, when the roots of the wings are reached, take one turn behind the wings. Fasten silk in clip.

Prepare and tie in hackle as in wet-fly methods, but with three turns towards the left. Clip stem of hackle.

Fasten silk in clip, and wind hackle about four turns towards the right, remembering to make the turns alternately before and behind the strained length of tying silk. Leave hackle strained taut by suspended hackle pliers.

Split the wings apart with the tweezers. Take hold of the hackle pliers with the left hand, and the near wing (a double thickness of course) between the right forefinger and thumb. Now wind the hackle one more turn towards the right, passing it between the wings, and again leave it strained taut by suspended pliers.

Then, again, take hackle pliers in left hand, and the off wing between forefinger and thumb of right hand, and wind hackle yet another turn, but backward towards the left, again passing it between the wings.

Secure hackle by two turns of silk taken close behind the wings, and by one or two more taken in front of them. Form whip finish.

Adjust hackle fibres, &c., and varnish head.

A second method of preparing wings for a dry fly is as follows:—

Lay the two thicknesses of feather fibre (each of the width of two wings) dark side to dark side, and then double both together. The result is illustrated sectionally in Fig. 57.

After some practice the beginner will be able to "square up" a sufficiently broad piece of feather to form all four thicknesses of the two wings. It will then be sufficient to double this piece twice when it is desired to prepare wings according to the method just described.

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It is to be observed that in a fly, winged by the first method given, the dark side of the winging feather is exposed, and *vice versâ* by the second.

Wings prepared after the second method may, when the fly is complete, be converted into "rolled" wings by their tips being twirled. The *modus operandi* is familiar to owners of moustaches. Personally, I do not admire "rolled" wings. They wear well, but this seems to be their only advantage. It is, however, sometimes convenient to "roll" the wings of a fly when,

FIG. 57. Sections of wings. A—As prepared by first method. B—As prepared by second method. The thick lines indicate the dark side of the feather.

after continued use, they become somewhat draggled.

Sometimes the four thicknesses of the wings are accurately paired. That is to say, that of the two outside thicknesses one is taken from a certain part of some particular feather of the right wing of a bird, and the other from the corresponding part of the corresponding feather of the left wing of the same bird; and the two inside thicknesses are, of course, similarly obtained. This plan may have its advantages in securing perfect symmetry, but I do not find it easy to carry out in practice, nor, indeed, to give

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appreciably better results than the other methods described.

There is, however, one fact which may be noted concerning it, which may possibly commend it to the beginner. The four thicknesses are put together just as they are cut from the quill

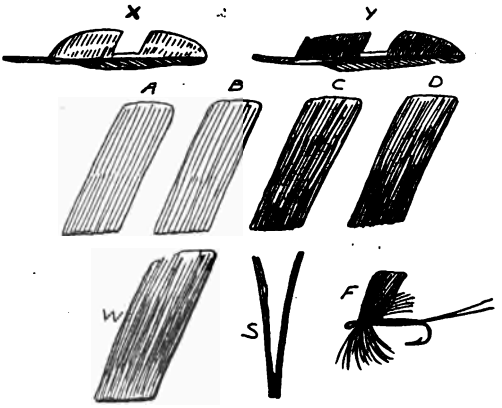

FIG. 58. Illustrating the preparation of wings by the "pairing" method. X—Feather from right wing. Y—Feather from left wing. A, B—Pieces of feather cut from X. C, D—Pieces of feather cut from Y. W—The wings ready to be tied in. S—Sectional view of same. F—Fly winged by "pairing" method. To form W: B is laid on A, C on B, and D on C.

(Fig. 58), so that the "squaring up" process illustrated in Fig. 32, is not essential. As this process is a somewhat delicate one to execute properly, albeit occupying a very short time, I would recommend the adoption of the "pairing" plan as a good means of evading it. Under these circumstances it will not be necessary to

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pair with absolute accuracy. It will effect the purpose in view, if the right wing of the fly is made from a right wing feather of the bird, and *vice versâ*. But the "squaring up" method must be learnt before the amateur can be considered proficient, and when once learnt it is really quite easy.

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CHAPTER XI.

HOW TO DRESS A DRY FLY.

Method No. 2.

Commence at the end of the shank, winding six or seven turns towards the left.

Take wings between the left forefinger and

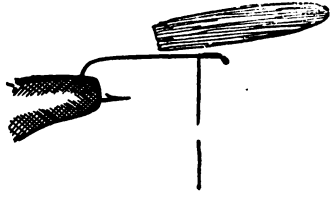

Fig. 59.

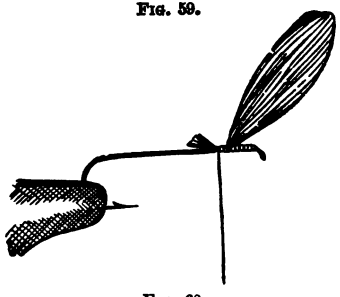

Fig. 60.

thumb, but with the tips, instead of the stumps, pointing in the same direction as the forefinger. Hold wings in position illustrated in Fig. 59, and

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tie in by a few turns towards the left. Fasten silk in clip, and cut away stumps slantwise. (Fig. 60).

Continue as usual till body is formed and secured behind wings. Tie in hackle, and finish exactly as in method No. 1 (dry fly).

By the method just described a fly of form C, (Fig. 54) is produced.

To Dress a Dry Fly with Two Hackles.

When, in any of the dry-fly processes described, the stage at which the hackle is tied in is reached

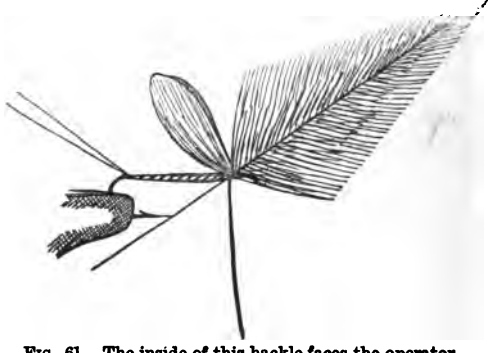

Fig. 61. The inside of this hackle faces the operator.

wind a couple of turns towards the left, close behind the wings.

Then tie in the "fore" hackle in the position shown (Fig. 61), with two more turns towards the left; and next, the hinder hackle, in the usual position, with another two turns in the same direction (Fig. 62).

Wind the hinder hackle three or four turns towards the right, alternately before and behind

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the strained length of tying silk, as usual. Fasten off hinder hackle with two turns towards the right. Fasten silk in clip, and cut away waste point of hackle just wound.

Now wind "fore" hackle one or two turns towards the right, alternately *behind and before* silk. Then bring hackle, as before, forward and backwards between the wings, and finish as usual.

The bringing of the hackle of a dry fly forward

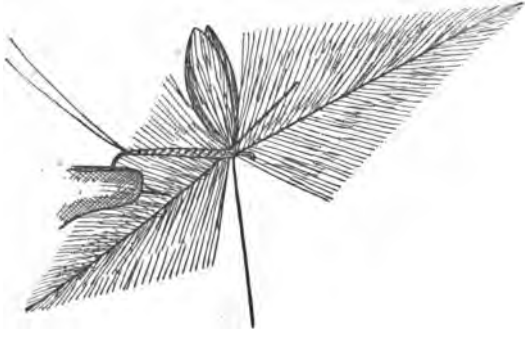

FIG. 62.

and backwards between the wings is, so far as I know, a method of my own. I find that it effectually checks the tendency of the split wings to close up together, when wet or in any way compressed.

If it be preferred, the hackle (or "fore" hackle when two are used) of a dry fly may be wound and secured in precisely the same manner as are the hackles of wet flies, and the wings split afterwards.

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The bringing of the hackle alternately before and behind the strained length of tying silk, and thus *interlocking* the stem of the hackle and the tying silk, is also a method of my own invention.

How to Dress a Downwing Dry Fly.

Commence as in method No. 1 (dry-fly), but leave more of the end of the shank bare than

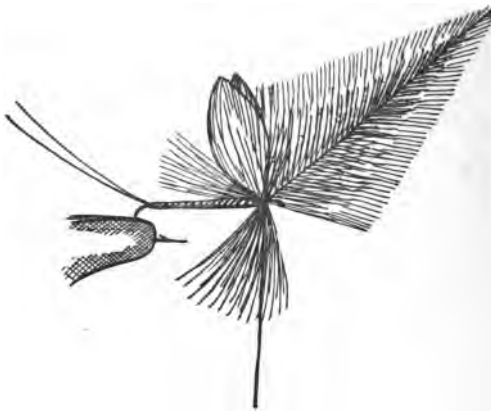

Fig. 63.

when dressing upwings. Form body, and tie in wings as usual. Clip stumps. Wind to end of shank and back again till within two turns of the roots of the wings. Tie in hackle (root pointing half-right) with two turns towards the left in front of the wings, and one turn behind them. Split the wings, and bring the first turn of the hackle forward between them, and in front of strained length of tying silk; the second turn

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back between them again, and, of course, also in front of the silk; and the third behind strained silk and forward between the wings.

Wind the next two or three turns all towards the right in front of the wings, and alternately before and behind tying silk. Fasten off hackle and finish as usual.

How to Dress a Dry Fly Buzz.

Commence at shoulder and wind towards the left to bend. Continue till body is wound and secured. Tie in hackle (root pointing half-right) on the under side of the shank, with three turns towards the left. Wind hackle as usual some half dozen turns, stroking the fibres into position when needful. Fasten off and clip point of hackle, and wind to end of shank. Wind back to roots of hackle fibres. Form whip finish, and complete as usual.

To Dress a Dry Fly Hackled over the Body.

This type of fly differs from an ordinary dry fly only in having a body hackle, which is added as part of the body material, after the manner described in the chapter on wet fly dressing.

How to Dress a Detached Bodied Dry Fly.

The advantage of detached bodied flies has long been a moot point among fly fishers. The majority of those who object to them content themselves, perhaps wisely, with the simple statement of their objection, occasionally, it may be, backing their remarks, by saying that they themselves have tried these flies without success.

I should be the last to deny the satisfactory nature of this argument, if it did not appear that

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the trials are, as a rule, most desultory; accorded, perhaps, under unfavourable conditions—"when things are slack," as the saying is—and not so much to make a test, as to excuse a condemnation. At any rate, in the face of the success of Mr. Halford and others with detached bodied flies, it cannot be said that those who urge the uselessness of these lures have the honours of the experiment argument all on their own side.

Inviting theoretical criticisms, we are told that the stiffness of a detached body, made on a foundation of bristle or gut, at once betrays its delusive character to the fish. But until we are enabled to dispense with a hook of tempered steel as an essential portion of our fly, it would seem that we are not in a position to press this objection very far.

Be this as it may, the flies of which I am about

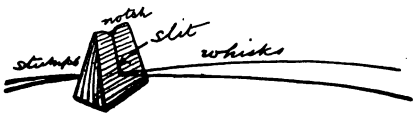

FIG. 64.

to describe the method of manufacture have bodies as soft and flexible as those of the natural insect, and are in another particular, already indicated,* so different from other detached bodied flies as to entitle them, according to their advocate's opinion, to a separate trial before the general sentence is passed upon them.

It will at least be granted that they can be

* *Vide* E, Fig. 54 (page 97), and accompanying text.

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much more easily and rapidly made than those which are at present more in vogue.

Fix a fine needle—the finer the better, so as it be strong enough—horizontally in the vice, the point of the needle towards the right.

Cut a small wedge-shaped piece of cork with a

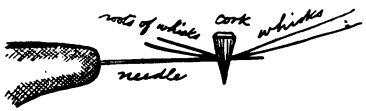

Fig. 65.

slit made transversely across the sharp edge. A small notch may also be cut to form, as it were, an estuary of the slit, and thus clearly indicate the latter's position. Take the fibres to imitate the whisks of the fly, and pull them carefully into the slit (Fig. 64).

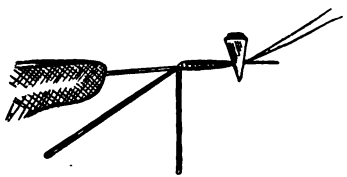

Fig. 66.

Then set the wedge astride the needle in the position shown in Fig. 65.

Take a finely cut strip of pure unvulcanised indiarubber, and, having moistened the forefinger with turpentine, roll the strip (pressing lightly) between forefinger and thumb, till it begins to

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feel "tacky," which it does almost immediately. Stretch it out slowly, extending it to some five or six times its original length.

Take one end of the strip in either hand, and stretch it across the needle and over the root ends of the fibres. Wind towards the left with the right hand, easing the tension of the india-rubber as the winding proceeds, so as to taper the body.

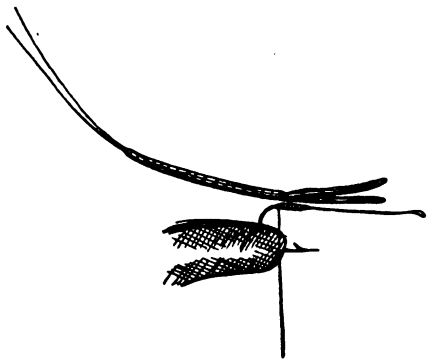

Fig. 67.

Remove the wedge of cork from the needle, and then the indiarubber body, by *pushing* it off with the nails of the left forefinger and thumb. The body will in a few minutes be, to all intents and purposes, a solid piece of rubber—soft, flexible, transparent, and durable.

Remove the needle from the vice, and fix in the latter an eyed hook of the proper size.

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Wax a length of tying silk, and, commencing at a point close to the bend, wind about half a dozen turns towards the left.

Hold the indiarubber body just made, in the

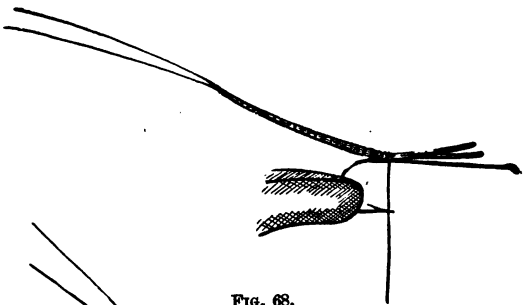

FIG. 68.

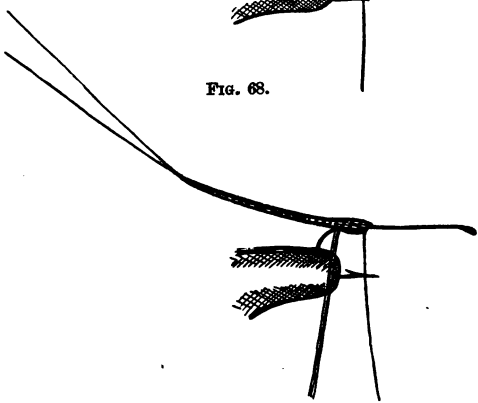

FIG. 69.

position shown in Fig. 67, and tie it in firmly, but not too tightly, with a few turns towards the right. Fasten silk in clip.

Now separate the two ends of the indiarubber.

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Stretch one of them out, and cut it away as closely as possible. Then pull out the other end as far as it will stretch without breaking, and wind it tightly towards the left over the tying silk.

Then wind back again towards the right to form the thick shoulder of the fly. Fasten off with two turns of tying silk towards the right,

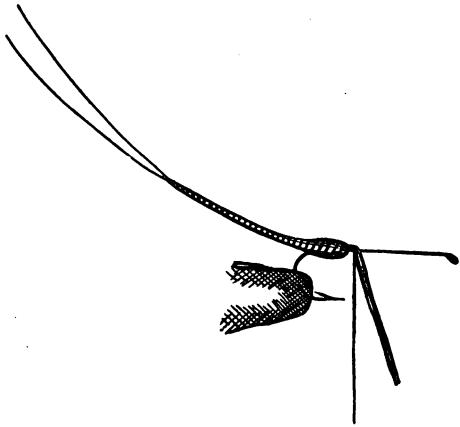

Fig. 70.

and fasten silk in clip. Stretch out the waste end of the rubber and cut it away.

Tie in wings and finish as in method No. 1.

A detached bodied fly of form F (Fig. 54) can be made exactly as described above, except that the rubber body should be tied in at a point nearer the end of the shank.

If desired, a number of the rubber bodies may

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be made at a time, and kept as stock for a long period. They should be protected from exposure to the light, as should all *un-vulcanised* rubber, which is otherwise apt to resinify at the surface.

Detached bodied flies, made as described above, have killed well used as wet-flies. When intended for such use, the half-complete fly illustrated in Fig. 70 may be finished as a wet-fly, viz., lightly hackled and with unsplit wings.

Detached bodied buzz-flies, wet and dry, will also be favourites in many quarters.

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CHAPTER XII.

HOW TO DRESS A DRY FLY—*(Continued)*.

To Make a Detached Body Ribbed in Two Shades of Colour.

For this purpose we require two very fine strips of rubber, one (A) dyed the lighter colour (say yellow olive), and the other (B) dyed, half its length the lighter colour, and the other half the darker (say, green olive). The latter strip is obtained by half immersing a strip, already dyed the lighter colour, in dye producing the darker shade. An effective, if somewhat recondite, way of doing this is as follows: Place a handkerchief on the table—the kitchen table for choice—and place a handful of flour in the centre. Take up the four corners and twist the four ends tightly together, compressing the flour into a ball. Dip the ball into a basin of hot water, then remove it from the water and squeeze it tightly over the basin. Repeat this operation till all the starch that is in the flour is dissolved and passes into the water, and there remains in the handkerchief nothing but the grey indiarubber like substance known as gluten. Collect the gluten into a ball.

Now take a number of finely cut strips of rubber, dyed yellow olive, and bury half of each in the ball of gluten, leaving the other halves sticking out of it. Mould the gluten thoroughly round the indiarubber, and immerse the whole in the green dye. When the exposed indiarubber is sufficiently deeply coloured, pick the strips from the ball of gluten. It will be found that the

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part of the rubber protected by the gluten is quite unaffected by the dye.

To make the ribbed body: Moisten the two strips (A and B) with turpentine, lay them together, and stretch them out. They may then be wound on the needle as one strip. The parti-coloured end (R. Fig. 71) should be held in the right hand, the light-coloured end (L. Fig. 71) in the left, and the middle (M) should be laid across the needle, so that, in effect, a parti-coloured piece of rubber is wound over a piece of one colour only.

To impart to unvulcanised indiarubber an olive

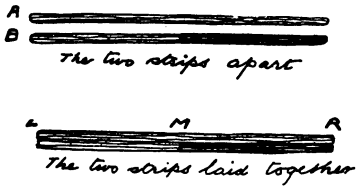

FIG. 71.

green colour, it should be treated with ordinary aniline green dye, labelled simply "green" by the makers. The indiarubber has a reddish colour of its own, which just corrects the too metallic shade which the dye naturally produces.

HOW TO DRESS A REVERSE WINGED FLY.

Fix the hook in the vice as usual, and, commencing close to the end of the shank, wind two or three open spiral turns towards the left Wind back over these (setting in the gut if dressing flies to gut), and continue till within three turns of the end of the shank.

Tie in the whisks with two more turns towards

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the right, bringing the next and last turn towards the right under the whisks. Tie in body material with a few turns towards the left, and wind silk to middle of shank.

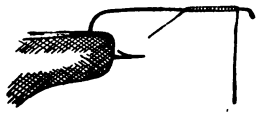

Fig. 72.

Flatten one end of a stout piece of hog's bristle (such as a shoemaker uses instead of a needle). Tie it in on the upper side of the shank, winding almost as far as possible towards the left, and

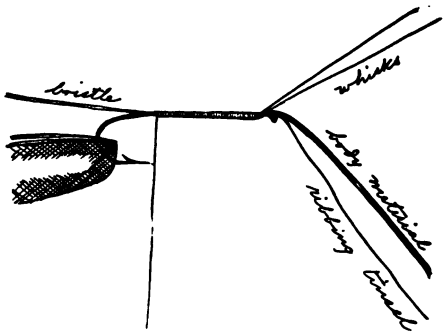

Fig. 73.

being careful to keep the bristle on the upper side of the wire. Fasten silk in clip, and wind body material, fastening off when the tying silk is covered.

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Now hold the left forefinger a few inches from the hook, and pass the tying silk round the forefinger and between the bristle and hook. Bring

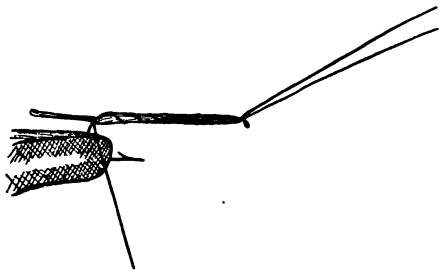

Fig. 74.

the end of the tying silk from left to right through the loop held open by the forefinger.

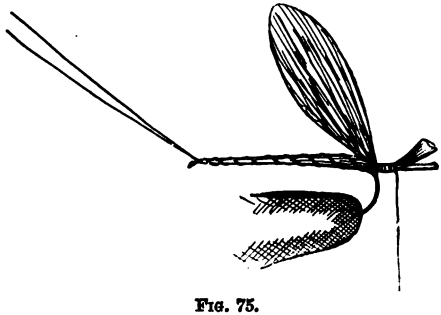

Fig. 75.

Then insert the dubbing needle into the loop in the place of the finger, and draw the loop tight.

Now remove the hook from the vice, and fix it in the position shown in Fig. 75. Take two or

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three turns of the tying silk towards the right, round the bristle, and tie the wings on the bristle.

Cut short the bristle and the stumps of the wings, and form the head of the fly.

Wind back to roots of wings, tie in and wind hackle, and finish as usual (Fig. 76).

How to Dress a May Fly.

The bodies of most of the standard floating May Flies are made of straw. This being a too

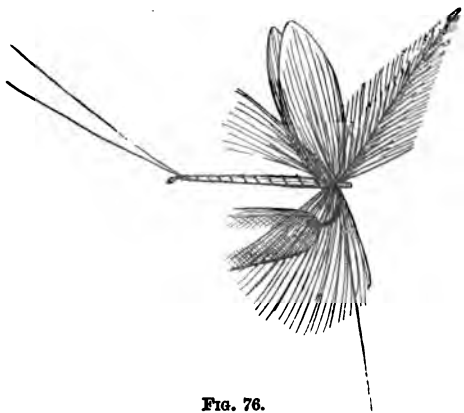

Fig. 76.

stiff and brittle material to permit of its being wound in the ordinary way, the following special method of using it, first published, I believe, by Mr. Francis Francis, is usually adopted :¡

Commence to make the fly, and continue as usual till whisks, ribbing hackle (if any), and a strong piece of ribbing tinsel have been tied in ;

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and the tying silk wound to shoulder. Fasten silk in clip (Fig. 77).

Now cut a narrow piece of bright straw of the length of the body and tapered, and make a small nick at either end (Fig. 78).

Cover the silk lapping neatly with the straw, so that the seam lies uppermost; and, holding the straw in place, fasten it, by winding the ribbing tinsel spirally over it.

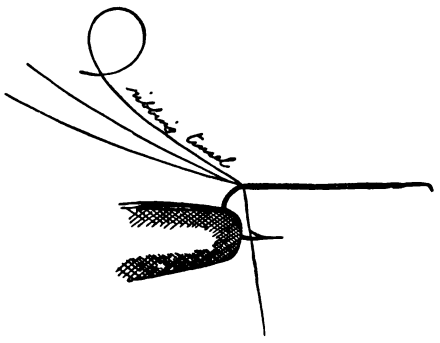

FIG. 77.

Secure the straw and ribbing tinsel with the tying silk at the shoulder, and wind and secure the body hackle (if any).

FIG. 78.

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The wings of a May Fly are usually made of two spoon-shaped feathers, taken from the back, breast, or sides of a drake or of a guinea-fowl. They are generally tied in, back to back, by their quills, and cut into shape, when necessary, after being tied in. This is the manipulation :—

Stroke back some of the lower fibres of the two feathers selected (Fig. 80).

Tie them in with a few turns towards the right.

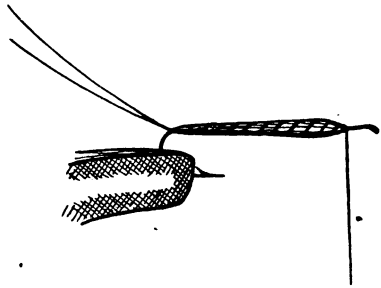

Fig. 79.

Set the stumps out at right angles to the shank, and take a few more turns of the tying silk in front of them to form the head. Wind back again to roots of wings, tying back the stumps

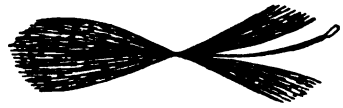

Fig. 80.

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en route. Clip these away as closely as possible, and proceed as usual.

The method of winging that I have just described is due to Mr. Halford.

The body of a May Fly may be made thicker, and, therefore, more natural looking, if some padding (indiarubber, wool, floss, or dubbing) be put under the straw. The padding is tied in and wound as body material.

A very natural looking body is made of straw, set in as already described, and covered with a thin strip of transparent rubber wound over it. This is of my own invention.

I have also made good bodies of a narrow strip of gardener's rofia grass twisted before being wound, and varnished afterwards with clear varnish. When the body is fastened off, secure the tying silk with a single half hitch ; varnish, and remove from vice till varnish is dry. There is, of course, no reason why one should be idle in the interval.

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CHAPTER XIII.

PARTING OBSERVATIONS AND HINTS.

THE earnest seeker after truth was advised by a certain great philosopher—Descartes, I think—to begin his quest *knowing nothing*.

Literally construed, the advice has been found impossible to follow; while, broadly construed, it has been followed by many, and has led to much.

There are, doubtless, many fly dressers who would give similar advice. "Know nothing of stereotyped dressings," they would say; "look upon the plumage of all birds, mark and learn, learn thoroughly; look then upon the fly, and name the feather which shall counterfeit wings or legs. Thus will you gain the knowledge of nature which you require direct from Nature herself."

But the practical man, as is his wont, will steer a middle course. He will approve of the methods just sketched out; but, recognising the importance of his labour becoming at once productive, will gladly welcome any suggestions which others may be able to give him. Seeing, however, that theories, as well as facts, have their part in regulating and fixing the "standard dressings" of flies, he will receive no information on this head as final, till he has tested it by his own experience.

It had originally been my intention to attempt a more or less complete list of the dressings of the commoner flies; but on looking closely into the matter, I have decided, with some reluctance,

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to leave this branch of fly dressing untouched. I find that the comparatively few novel features discoverable in my dressings have, with one or two unimportant exceptions, already been broadly indicated in my chapter on materials and elsewhere throughout the present series of articles. Novelty is often a doubtful virtue, but it may be safely assumed that a spicing of it should not be lacking in anything that one aspires to set down in print, and by this assumption I must for the present be guided. It seems to me also that the task of reviewing the different flies in their order, and pointing out how they may be identified and imitated, cannot be adequately performed without the aid of colour printing.

Ronald's "Fly Fisher's Entomology" long held its place as the standard work on "flies" and their dressings, and will still be found a capital work of reference; but Mr. Halford's latest book, "Dry Fly Entomology," must now be regarded as the highest modern authority on the subject. Though published but a year or two ago, it has already on many occasions been used as the supreme court of appeal by disputants, on questions relating to the very numerous, yet closely connected matters with which it deals.

I feel, therefore, that I may safely leave the student of fly dressing to draw upon that storehouse for such information as he needs, as to the life history, classification, and characteristics of the insect upon which the trout feeds.

There remain only one or two miscellaneous matters upon which I desire to touch before bringing these papers to a close.

As I have indicated, it is of the first importance that the fly dresser should go direct to Nature for his model; but though dozens of the natural fly be on the water and in the air, it is often a matter

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of difficulty to catch a specimen, and it is especially difficult in the case of flies which do not rise far from the surface of the water, but appear to skim about upon it. An ordinary landing net is of little use. But by procuring a small muslin net, specially prepared to withstand the water, and fixing four or more watch swivels at equal distances round the mouth, by which the muslin net can be affixed when requisite to the meshes of the landing net, the difficulty may be substantially overcome. Suitable nets in all sizes may be obtained from Messrs. Watkins and Doncaster, naturalists, of Holborn Viaduct.

In imitating flies which, like the up-winged duns, float upright on the water, and present their under sides to the inspection of the trout, it is specially desirable to reproduce successfully the colouring and appearance of the under side. Perhaps the best method of achieving this is to place the fly in its natural position either on a small, flat mirror, or else upon the surface of water, in a basin at the bottom of which lies such a mirror. It will often be found there is an appreciable difference of colour between the upper and under sides of the body. It may be fairly objected that the mirror throws upward upon the under side of the fly more light than would be reflected by the bottom of a river or pond; but the surface of the water in sunlight itself reflects no little light upon the insect; and, further, the general tendency of the dresser is to dress rather more darkly than the colour and natural luminosity of the fly warrants. The fault induced therefore, if any, is likely to be on the right side. This method will enable comparisons to be made between the natural fly and the artificial while in progress, comparisons which should be especially valuable in the case of indiarubber bodies.

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Indiarubber bought in blocks and unvulcanised is of a red colour, and when cut in very fine narrow strips makes admirable bodies for flies. The best way to cut it fine is to use a razor which has been moistened with cold water. It is, however, made in layers, which can be separated without difficulty, and the cutting need only be in one direction.

The strips of rubber are specially good for dressing Red Spinners; in fact, nothing else will imitate the natural body so well.

For winging Red Spinners, Jenny Spinners, and other clear-winged flies, the best material that I know is a very thin tough skin, which is obtained from the outside of the quill of an ordinary rook's wing feather by the following method: Clip off the quill stump, and steep it in water for a few minutes. Then slit it up with a pair of scissors. It will now be found that the outside of the quill will easily peel off without tearing. Cut two pieces of this material into the shape of wings and tie in. The result is a beautiful, almost transparent, wing, which is really most natural and is very durable. It will take a dye for such patterns as the Iron Blue Dun.

A common error of the beginner is to try to tie in too broad a wing. It is best to begin with narrow wings, and to work gradually up to greater breadths as experience and knack is acquired. Of all feathers, thrush, perhaps, works up most sweetly for wings; next, perhaps, blackbird, woodcock, starling, and jay.

For dressing large wet flies with a dark wing, I always prefer brown mallard to grouse, partridge or woodcock; but it should be borne in mind that the fibres of the mallard feathers are harder and coarser than those of most other winging feathers, and where four-ply is used they require to be carefully and more securely fastened in.

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And now I lay down my pen, thankful to have been permitted to bring my task to a conclusion. It has been a labour of love, and I give it to the great angling public, in the hope that it may be found to contain something of service to those who come after me, and cast their flies upon the waters which I have loved so well, and may never see again.

FINIS.

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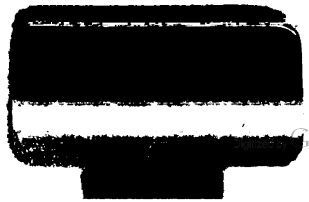

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